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LOYOLA MARYMOUNT UNIVERSITY

Amplifying Marginal Voices of the Global Movement for Deeper Learning:
A Case Study of a Rural K-12 Mission School in Cambodia

by

Mark Peter L. Lopez, SJ

A dissertation presented to the Faculty of the School of Education,
Loyola Marymount University,
in partial satisfaction of the requirements for the degree
Doctor of Education

2023

Amplifying Marginal Voices of the Global Movement for Deeper Learning:

A Case Study of a Rural K-12 Mission School in Cambodia

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by

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This dissertation written by Mark L. Lopez, SJ, under the direction of the Dissertation Committee, is approved and accepted by all committee members, in partial fulfillment of requirements for the degree of Doctor of Education.

February 24, 2023

Date

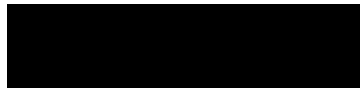
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Ad Majorem Dei Gloriam

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ABSTRACT

Amplifying Marginal Voices of the Global Movement for Deeper Learning:

A Case Study of a Rural K-12 Mission School in Cambodia

by

Mark Peter L. Lopez, SJ

Several paradigms have been developed to define what constitutes *deeper learning*, how to foster it, and what desired outcomes or competencies can result from it. Much of the literature, however, has been based on studies in economically developed Western countries. There has been little, if any, that is based on developing country settings where culture and context can account for differences in the manner of promoting deeper learning. This qualitative case study explored the experiences of learners in the Mudita Mission School (MMS; pseudonym), a K-12 school in a rural part of northern Cambodia, and investigated how deeper learning was enacted, valued, and fostered there. It also examined challenges and opportunities for promoting deeper learning faced by the school. This study sought to contribute to the global movements for deeper learning by highlighting voices from marginalized communities, thus expanding the conceptual frameworks which have been exclusive of experiences of students and educators in impoverished country contexts. This study also sought to contribute to the literature that informs Cambodian educational reform. Study findings suggest that fostering eco-humanistic value-systems and respect for Khmer culture scaffold arcs of deeper learning in the MMS, and that several innovative pedagogical practices uncommon to many rural schools in Cambodia were

transforming the educational experiences of students there. Based on the findings, the author proposes a theory of Epistemologies of Deeper Learning to complement frameworks in the literature.

PROLOGUE

My interest in deep learning has been fueled by something I have seen in the development of my own social consciousness: that educating for social justice necessitates educating for depth. From the time my social justice ideals were first awakened in my youth to the period of study under this doctoral program for educational leadership for social justice, cultivating deep reflection, deep listening, and a deeper understanding of society and the world have played an essential role in the development of my social awareness or of what Freire (1970) called the *critical consciousness*.

One of my earliest childhood memories was from the day when the Philippine Senator and opposition leader Ninoy Aquino was assassinated. On August 21, 1983, upon returning from three years of exile in the United States, Aquino was shot dead upon stepping out of the plane on the airport tarmac in Manila (Associated Press, 1984). I was only seven years old then but remember the silence that filled our house on the afternoon of the shooting. It was a silence punctuated by reports coming in through the radio and by the hushed tones of my parents and grandparents reacting to the news, through which, without their knowing, they were modelling deep compassion and deep concern for the state of our country.

Three years later, I would be among the youngest Filipinos who took part in the peaceful People Power Revolution that toppled the 21-year Marcos dictatorship that Aquino had valiantly opposed. By then, Ferdinand and Imelda Marcos and their cohorts had tortured and murdered thousands of political dissenters and had plundered the country's coffers of an estimated US\$5-10B (Gilliland, 2021; Laurie, 2014; Mydans, 2011). On the first days of the revolution, my parents and older siblings were among the hundreds of thousands who marched and camped out

on E. De los Santos Avenue (EDSA), the capital's main thoroughfare. After some insistence on my part, I was allowed to join them on the fourth day of the peaceful protests (which would turn out to be the last one), only when it was clear that the military detail earlier ordered to fire upon the crowds had defected, sided with the people, and was now protecting them. That revolution showed me the power of deep convictions in the work for societal change.

In high school I read the novels of our national hero, Dr. Jose Rizal. His writings from the previous century ignited the movement that freed us from almost 400 years of Spanish colonization (Ocampo, 1962). Over a hundred years after the novels were written, they would continue to awaken in me and many in my generation not only anti-colonialist mentalities, but also mindfulness of the malignant social cancers that continued to plague our country to that present time (Alatas, 2011; DeStephano, 2011). In the 1990s, while the Philippines was still trying to recover from the ravages of the previous administration, corruption continued to plague many branches of government, and systemic injustices deepened as the poor became extremely poor, and the rich exponentially wealthier. The idealism that carried the country through a peaceful revolution was apparently not enough to set all things right. Thinking about these seeming contradictions allowed me to nuance my views on the complexities of nation building.

In college I read Paulo Freire (1970), Oscar Romero (1980/1985), and Niall O'Brien (1987), studied the Theology of Liberation, and reflected deeply about how neither the freedoms paid for by the blood of our national martyrs nor the influences of centuries of Catholicism had translated into a society that ensured a better life for the multitudes of Filipinos who were poor and continued to be pushed to the margins.

In early adulthood and later on in life, I was immersed in work for historically marginalized groups, first in the Philippines with agrarian, fisher, indigenous and informal settler communities, and then in neighboring Cambodia, working for students from ultra-low-income families and youth with disabilities (many of whom were survivors of landmine and cluster bomb explosions). Seeing the various facets of poverty and marginalization perplexed me further, and an understanding of the complexities and contradictions of the movement toward social justice came only with deep reflection on these painful realities, deep listening to the voices and stories of those who suffered, and a willingness and ability to keep wrestling with highly complex problems with no self-evident solutions.

Perceiving, acknowledging, and understanding social injustice and committing myself to the work of dismantling the social structures that perpetuate these injustices required of me much more than a shallow view of the world. The historical and systemic erasure, oppression, and marginalization of peoples require deeper levels of comprehension of sociological and moral realities (Burns et al., 1998). Engaging in the work for social justice requires critical analysis and deep reflection (Freire, 1970, 1973; Namulundah, 1998; Westheimer & Kahne, 1998). In the same way, building educational communities that celebrate diversity, equity, and inclusion and that help to form the future agents of social change will require educating for depth.

CHAPTER 1

INTRODUCTION

Over the last decade, global leaders in education reform repeatedly identified the need to further *deeper learning* as one of the most pressing needs of school communities of this time (Chow, 2010; Conley & Darling-Hammond, 2013; Fullan & Langworthy, 2014; Nicolas, 2010; Pellegrino & Hilton, 2012). For many education leaders, promoting *deeper learning* has meant seeking ways to help students go beyond the mere memorization or shallow understanding of lessons. More particularly, this means strengthening the ability to relate and organize information into larger schemas of understanding (Mehta & Fine, 2019), developing competencies that would enable them to more deeply and successfully engage the evolving demands and challenges of the future that awaited them (Chow, 2010; Pellegrino & Hilton, 2012; Fullan & Langworthy, 2014), cultivating depth of thought, vision, convictions and human relationships (Nicolas, 2010), and being disposed to life-long learning (Fullan & Langworthy, 2014).

Various definitions of deep learning have been used by different educational reform proponents. These have included (a) “the process through which an individual becomes capable of taking what was learned in one situation and applying it to new situations” (Pellegrino & Hilton, 2012, p. 5); (b) “the process of fusing content knowledge with real-world situations” whereby students “transfer knowledge rather than just memorize it” (Towler, 2014, para. 2); (c) “arcs of learning that develop over time” which are reinforced by “powerful learning experiences” that happen at the intersection of “mastery, identity and creativity” (Mehta & Fine, 2019, p. 16); and (d) learning that is retained for the long term (Fullan & Langworthy, 2014; Wergin, 2019) and that allows students “to engage issues and tasks of value to students and the

world” (Fullan et al., 2018, p. 36). Despite varying definitions, the different contemporary paradigms adhere to the common assumptions that previous empirical studies have established, namely, that deeper learning involves going beyond rote learning or content memorization (Fräsineanu, 2013; Marton & Säljö, 1976); engaging subject matter on the level of meaning (Marton & Säljö, 1976); associating new information with previously acquired knowledge and applying reflexivity (Fräsineanu, 2013); and being aware and in control of one’s learning process (i.e., *metacognition* or *meta-learning*; Biggs, 1987; Van Rossum & Schenk, 1984; Watkins & Regmi, 1996). The focus of this study was not *deep learning* as it is referred to in the field of data analytics and artificial intelligence. Rather, the focus of this study was deep learning as a “new conceptualization of the learning process” prompted by the re-imagining of “what’s important to be learned, how learning is fostered, where learning happens, and how we measure success” (Fullan et al., 2018, p. 13). It was what Mehta and Fine (2019) observed to have become an “umbrella term that has emerged over the past decade to encompass a range of desirable attributes of schooling, attributes rooted in the premise that schooling needs to move beyond rote learning and shallow testing” (p. 10).

The Need for Deeper Learning

The concern for education to be deeply engaging and transformative through deep learning is certainly not new. Ancient Greek philosophical texts like the *Dialogues* of Plato, for example, depict Socrates, a philosopher who is believed to have lived in Athens from 469BC-399BC, giving primacy to a method of *philosophical midwifery* or of helping students to *birth* ideas or ground opinions through discursive questioning and guided reflection on virtues and morals (Brickhouse & Smith, 2009; Stanford University Center for Teaching and Learning,

2003). These Socratic texts would eventually contribute to the development of what has been commonly known as the Socratic method of teaching, whereby the “teacher is an observer, a helper, [a] guide, but not the purveyor of knowledge. Lectures [based on] undeniable facts... and rote memorization [are] replaced with shared dialogues between students and teachers where both are responsible for pushing the dialogue forward through questioning” (Delic & Bećirović, 2016, p. 512). Earliest references to this method as a pedagogical term applied beyond philosophical circles first appeared in early 18th century England, whereby respected educators of Oxford and proponents of liberal education regarded this method as representative of “a dialogue or common conversation . . . more fit to excite the attention and sharpen the penetration of the learner, than solitary reading, or silent attention to a lecture” (Watts, 1754, p. 126, as cited in Schneider, 2013, p. 616). By the mid-19th century, the Socratic method had been commonly acknowledged as an effective teaching technique in the fast-growing basic education systems in America (Schneider, 2013) and would eventually find its application to the study of law, medicine, business, and almost any field where the development of critical thinking is crucial (Boa et al., 2018; Brickhouse & Smith, 2009; Delic & Bećirović, 2016).

Other aspects of deeper learning, while formulated with different terminologies, have also been given emphasis by education reformists through the decades (Bellanca, 2014; Mehta & Fine, 2019). As early as 1893, Joseph Mayer Rice, for example, highlighted the differences between *old education* and *new education*, with the former employing mostly drills and recitation and the latter aiming to “lead the child to observe, to reason, and to acquire manual dexterity as well as to memorize facts—in a word, to develop the child naturally in all his faculties” (Rice, 1893, n. p., as cited in Mehta & Fine, 2019, p. 11).

Perhaps most prominent among education reformists was Paulo Freire, whose articulation of the *banking model* of education decried how mainstream education systems treated students as mere repositories or empty vessels into which teachers needed simply to *deposit* knowledge. Instead, he asserted that authentic education needed to be at the service of freedom, and could only be attained by developing the *critical consciousness* of students. This critical consciousness allowed them to become more deeply aware of historical and social circumstances impinging upon their lives and highlighted their agency and responsibility in transforming oppressive realities (Freire, 1970).

Economies of the 21st Century

Despite this longstanding valuing of deep learning in the field of education, several factors have prompted education leaders to signal the need to pay greater attention to deeper learning in schools today. Many educators see promoting deeper learning as a necessary response to the increasing and rapidly changing demands of 21st century economies. Trends in automation, digitization, and the downsizing and off-shoring of companies have caused shifts in employers' standards of employability (Levy and Murnane, 2007) and have created larger gaps between the skills imparted by more traditional forms of education and the skills desired of entry-level employees (Cheng, 2007; McGunagle & Zizka, 2020; Sarkar et al., 2016). Based on employability studies, the *ideal hire* is one who demonstrates proactiveness, possesses the ability to work well with a team, is motivated to find creative solutions, and is able to share these effectively with others (Chow, 2010; McGunagle & Zizka, 2020). In corporate settings, routine cognitive and manual tasks requiring only rule-based inductive or deductive mental processing (previously undertaken by specialized human laborers) are prime candidates for computerization.

Tasks that require complex problem solving skills, on the other hand, (i.e., skills for resolving issues for which there are no rule-based solutions, and which, therefore, are too complex to be programmed for computerization) as well as tasks that require complex communication (involving human interaction, explanation, persuasion and acquiring information) are what *ideal hires* are expected to be able to perform (Levyand & Murnane, 2007).

Traditional pedagogies and school systems which focused on promoting content mastery and the development of the core competencies of reading, writing, and arithmetic no longer adequately prepare students with these other competencies which have become more critical to the 21st century workplace and university setting (Bellanca, 2014; Chow, 2010; Pellegrino & Hilton, 2012). Schools, therefore, are having to adapt and find ways to ensure that students are engaging in learning with the depth that allows them to acquire these critical skills.

Technological Advancement and the Internet

Some education leaders see promoting deeper learning as an imperative to combat prevalent aspects of contemporary culture being quickly re-shaped by technological advancements, and which, immerse the youth in shallow thinking and superficial ways of understanding and engaging others and the world today (Carr, 2020; Nicolas, 2010; Ohlsson, 2011; Wergin, 2019). Since the daily and ubiquitous use of the internet and electronic gadgets (e.g., mobile phones, tablets, and desktop or laptop computers) became common for school-age children in the 2000s, for example, the landscape of concerns of the youth has changed dramatically. The ways that the internet has positively impacted the youth and education, on the one hand, are many and widely accepted. The internet has made educational resources much more easily accessible to the young, given them a wider range of screen-based recreation (e.g.,

on-line gaming and surfing), and provided them easier means and platforms to keep informed and connected to their family and peers via email, instant messaging, social networking sites, and text messaging (Cotten, 2008). Its positive impact on education has been far reaching in terms of creating learning opportunities far beyond the classroom, enriching the quality and diversity of accessible information and knowledge, promoting cross-cultural learning, equipping teachers with greater resources to build lesson plans and improve pedagogy, strengthening interactive modes of learning, and improving the efficiency and cost effectiveness of school operations (Internet Society, 2017; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020b). This positive impact has continued to grow, as seen during the period of the COVID-19 pandemic, whereby education work was able to continue via remote learning platforms made possible only by the internet (Brennan, 2020). While some argue that it has also helped to bridge gaps of inequity in education (Internet Society, 2017), a more balanced view was that it has the potential to either improve or exacerbate the digital divide, depending on the investments of governments and civil society in ensuring connectivity for all (UNESCO, 2020b).

Negative impacts of the internet, on the other hand, have also been well studied. Excessive usage has been seen to negatively affect sleep, diet, school performance and the general health and well-being of children and teens (*Media's Effect on Youth: Reaching Teens*, 2016). Education researchers and education psychologists have warned school communities about the negative impacts of these technological advancements, among which are the weakening of social skills and internet addiction (Romero-López et al., 2021), easier access to pornography (Andrie et al., 2021), increased vulnerability to bullying, child abuse, exploitation

and mental health issues (Yu & Chao, 2016), and increased exposure to and influence by extremist and hateful ideologies (Costello et al., 2020).

Several empirical studies over the past decade have suggested that the emergent culture of the digital age has made deeper and long-term effects on cognitive development and deeper thinking. Positively speaking, education psychologists have observed that cognitive processes of the generation of youth who have been exposed to digital technologies from childhood are seen to be less linear, and more parallel than sequential, thus attuned to creative thinking (Carr, 2020); IQs of successive generations of students have continued to rise globally since the Second World War (Carr, 2020; Small & Vorgan, 2011); and there has been evidence of how technology and digital tools have positively impacted the development of writing abilities of students (Pew Research Center, 2013; Wen & Walters, 2022).

Negatively, there are studies that have suggested that increased internet usage has contributed to the diminished ability for (a) critical thinking and evaluative judgement (Strauss, 2019; Wolpert, 2009); (b) reflection (Deresiewicz, 2011; Prensky, 2011) ; (c) sustained reading and reading for pleasure (Carr, 2020; Deresiewicz, 2011; Wolpert, 2009); (d) making the rich connections that come with deep, unhurried reading (Carr, 2020; Jackson, 2011) and (e) self-motivation in studies (Science Daily, 2020). As such, Carr (2020) furthered that increasingly frequent internet use produces shallower thinking. Technological advances affecting education therefore present both opportunities and challenges, fostering cultures deleterious to deeper learning, but also creating new means to effectively promote it.

Globalization

Similarly, globalization has been another major determining factor that has presented both challenges and opportunities for deeper learning in schools. Globalization has been defined as:

a process or condition of the cultural, political, economic, and technological meeting and mixing of people, ideas, and resources, across local, national, and regional borders, which has been largely perceived to have increased in intensity and scale during the late 20th and early 21st centuries. (Jackson, 2016)

Since highly globalized economies tend toward privatization (i.e., the “transfer of ownership and control of government or state assets, firms and operations to private investors”; Organization for Economic Cooperation and Development [OECD], 2002, para. 1) educators have raised concerns about trends in primary and secondary education. Increasingly, market-driven governments and societies are having education serve the economy’s ends and are no longer valuing education as an end in itself. Fields of study (e.g., history, philosophy, etc.) as well as pedagogies (e.g., critical theory, reflection, classroom discussions on social analysis) that do not directly serve the prevailing market-driven economy’s values are deemed less important by schools and by students alike (Stromquist & Monkman, 2014). One of the concerns about globalization, therefore, despite the multivarious benefits it has brought to education, has been that it has undermined the value of these fields of study and pedagogies that foster deep learning.

Another consequence of globalization that deep learning proponents have flagged is the growing acceptance of English as the lingua franca in globalized societies and inter-cultural relations. This gives the English language greater practical importance, often at the expense of the deterioration of local and indigenous languages. Some have called this a form of present-day colonization and epistemicide (Popadopoulou, 2018; Sua & Santhiram, 2017), one that fosters

school cultures that erase the identity, native language, and cultural wealth of the many students whose first language at home is not English. When schooling becomes detached from the cultural wealth and the life backgrounds of students, student engagement and achievement suffers, precisely because learning becomes shallow (Martin et al., 2017; Pirbhai-Illich et al., 2017).

Despite these concerns, many educators also acknowledge the positive impact and opportunities that globalization presents for deeper learning in schools. These include the improvement of pedagogies, curriculums, assessment, and organizational leadership due to the greater interconnectedness and ease of technology-sharing across global teaching communities (Jackson, 2016; Popadopoulou, 2018), enhanced school programs that prepare students for multinational roles, global citizenship and sustainable development (Hugonnier, 2007; Jackson, 2016; Popadopoulou, 2018), a more holistic understanding of global relations and greater opportunities for students to participate in them (Popadopoulou, 2018); greater inter-contextual awareness that strengthens the ability of students to face adversity and adapt to real-world challenges (Jackson, 2016; Mansilla & Gardner, 2007; Popadopoulou, 2018; Süssmuth, 2007); the enhancement of teamwork and the exchange of ideas across cultures (Popadopoulou, 2018), and enhanced sensitivity to cultural nuances and patterns in inter-cultural education (Gärdenfors, 2007; Roosens, 2007). As such, both the negative and positive effects of globalization in schools are factors which proponents of deeper learning will need to face.

Simultaneously Emerging Global Crises

Insofar as deeper learning involves allowing students to engage real-world problems and issues directly affecting them and their communities (Fullan et al., 2018), it is significant to note

that the entire generation of youth who were of school age at the time of this study was having to grapple with multiple, simultaneously emerging global crises which further highlighted the importance of promoting deeper learning in schools.

COVID-19

The coronavirus pandemic was a flashpoint for deeper learning. Two years into the pandemic with over six million deaths worldwide, there continued to be widespread infection, rising hospitalization and death rates, and difficulty in attaining the desired herd immunity because there were substantial parts of world populations that refused to be inoculated with the available vaccines or to adhere to masking mandates (Corse, 2021). Studies that explored the reasons behind people's refusal to comply with mandates associated this with widespread belief in information that was not in line with the scientific community's consensus on the available data, and that was confusingly misleading or plainly false (Allen et al., 2021; Taylor & Asmundson, 2021). A well-cited example was former United States President Trump's significant contribution to the volume of false and misleading statements about COVID-19 through various pronouncements related to the pandemic and the use of facemasks. Commentators who have carefully analyzed these have suggested that the former President's failure to align himself publicly with and to help communicate the scientific community's consensus on pandemic protocols contributed to the United States having the highest coronavirus death toll worldwide. This underscored "the importance of teaching critical thinking and the careful evaluation of the trustworthiness of sources to avoid falling for fake news and populist propaganda" (Rudolph et al., 2021, p. 37). and, in turn, fueled education researchers' efforts to highlight the importance of promoting deeper learning which encompasses critical thinking and

reflective judgment, both necessary for the evaluation of truthfulness (Beene & Greer, 2021; Rudolph et al., 2021).

Disinformation and Heightened Polarization

The problem of the increased proliferation of misleadingly false information, conspiracy theories, and populist propaganda, however, goes further back, and was apparent long before the start of the coronavirus pandemic. Tucker et al. (2018) extensively reviewed literature on political information available on-line and found that there were as many categories as (a) “fake news”, (b) deliberately factually incorrect information, (c) inadvertently factually incorrect information, (d) politically slanted information, and (e) “hyperpartisan news”. In a section on *Misinformation, Polarization and Democracy*, they offered this note:

Faris et al. (2017) argue that highly partisan media is the primary incubator and disseminator of disinformation today. Over the last decade, an extensive network of hyperpartisan right-wing news sites and blogs has emerged (Faris et al., 2017; Eldridge 2017). The American far right has a history of exploiting new media to advance their ideological agenda—from their use of anti-communist radio in the 1950s to the rise of right-wing talk radio in the 1990s. (Tucker et al., 2018, p. 26)

Further on, they also stated:

In the most comprehensive empirical study of hyperpartisan media both on and offline, to date, Faris et al. (2017) demonstrate that hyperpartisan news is much more widely shared on Facebook than the types of explicitly fake news stories described in the previous section. Examining linking patterns on news websites, they also find that the U.S. media environment is asymmetrically polarized. The far right is a dense, tightly linked network that is largely isolated from other media sources, whereas the far left is largely integrated into the mainstream media discourse. (Tucker et al., 2018, p. 28)

The highly polarized social climate that the culture of misinformation has fueled, by its nature, does not lend to listening across difference (Kress, 2018). Those on either side of a political or belief spectrum tend to listen only to arguments which affirm the points they already believe in (cf. *confirmation bias*), tend to demonize those whose beliefs they do not adhere to,

and refuse to or do not demonstrate the ability to dialogue (Esteban & Ray, 2008). Listening across difference, according to Kress (2018), is an essential part of the Freirean conceptions of authentic learning and liberation (Freire, 1970), and, in line with this study, relates directly to deeper learning.

Underlying structures that determine the prevailing internet culture and its systems for gathering and propagating information have further exacerbated this polarization. Former Facebook employee Frances Haugen, for example, testified before a United States Senate subcommittee and said that Facebook's leadership was not only aware that the social media platforms run by their company (i.e., Facebook and Instagram) were fueling the culture of polarization but that they were purposefully taking advantage of this polarization to further their already "astronomical" profits (Murphy, 2021, para. 3). Algorithms that these platforms employed to ensure greater engagement by users are designed to lead users to on-line material that is already of their political, ideological, or religious leaning, based on their previous on-line activity (Orlowsky, 2020). These on-line platforms, therefore, reinforce the *echo-chamber effect*, a term coined by internet activist and ethicist Eli Pariser, whereby those on one side of a polarized issue will hear, affirm, and adhere only to what they already are inclined to believe (Nguyen, 2020).

Denter and Ginzburg (2021) studied and reported on how this polarization was further fed by and taken advantage of by politicians who employed *troll farms*, defined as "groups of fake social media accounts that flood social media platforms with messages emulating genuine information for the explicit purpose of voter disinformation" (p. 1). In 2017 alone and in at least 18 countries including the United States and the Philippines, disinformation tactics and online

manipulation affected the outcomes of national elections (Kelly et al., 2017). Both the culture of disinformation and polarization, therefore, further highlight the significance of fostering deeper learning.

Climate Change

Finally, the last of the global crises which underscored the significance of this study is climate change. Although there has been increasing belief in the scientific community's consensus on climate change among members of the general population (Milfont et al., 2017), the slow acceptance of this consensus has brought the world dangerously close to *the point of no return*, after which the destructive effects of man-made global warming are deemed irreversible. Between 2020 and 2022 alone, the effects of ocean level rise, forest fires, intensified storm patterns, extreme heat waves, and prolonged droughts have already been felt across the world, ravaging ecosystems and communities on an unprecedented scale (US Geological Survey, 2022). The most recent report from the Intergovernmental Panel on Climate Change (2022) presented a bleak picture of the inevitable impacts of trajectories of the past five decades, given the failure of governments to minimize carbon emissions. The report also presented evidence of how these impacts are escalating at rates much higher than were originally projected. Many leaders of nations and of civil society organizations have therefore expressed greater concern over the report and have stressed the urgency of collective action (Plumer et al., 2022).

If adequate collective action in decreasing CO₂ emissions is not attained, impending disasters cannot be averted. Shearman and Smith (2007) have identified the problem as a *failure of democracy* insofar as democratic systems have protected market values and have prevented states from making the necessary mandates for sustainability. Taking on measures to mitigate the

crisis effectively requires urgent global collective thought and action that would enable the judicious functioning of these democracies. This, in turn, is possible only with the kind of comprehension, concern, commitment, and conversion that deep learning can foster.

Over-arching Structures of Inequity

Ultimately, this hyper-complexification of the world brought about by globalization, technological advancements, their consequent socio-economic and cultural trends, and the multiple global crises that have manifested clear and present dangers to communities in which these students belong has highlighted the need for schools to ensure deep learning for all students. Instilling the capacities for deeper learning will allow students to better understand, grapple with, and transform these complex realities of the present time. As Suárez-Orozco and Sattin (2007) have argued:

The work of education in the twenty-first century will be to nurture and stimulate cognitive skills, interpersonal sensibilities, and cultural sophistication of children and youth whose lives will be engaged in local contexts and yet will be suffused with transnational realities. Schools that are neither anachronistic nor irrelevant will be necessary to teach today's youth to thrive in the complexity and diversity that define the global era. (p. 12)

While the concern and need to promote deeper learning seems universal, social justice-oriented education leaders have pointed out that an understanding of deep learning educational needs today will be grossly incomplete without considering the problem of inequity. Economists and finance specialists estimate that the poorest half of the global population owns only 2% of global wealth and the richest 10% own 76%. This was according to the latest World Inequality Report of the World Inequality Lab (Chancel et al., 2022). The report emphasized that this inequality exists not only across rich and poor countries but certainly also *within* countries. The COVID-19 pandemic has further exacerbated this wealth gap, with the ultra-rich gaining

exponentially larger profits from investments that did well over the past years, while the ultra-poor who lost jobs and sources of income, and who were more likely to be infected by the virus due to their often smaller and more cramped living spaces, suffered the greatest effects of the coronavirus. Based on the data in this report, economists suggested that only through political intervention (e.g., taxation policies that will allow the re-distribution of wealth) will it be possible to address these growing inequalities (Myers, 2021).

Simplistic meritocratic narratives often assert that people who are poor are poor because they are lazy, inept, or desirous of their miserable fate. Increasingly, however, social analysis and modern economics have clarified that the plethora of unjust social structures—of inequity, white supremacy, and government policies that favor market-driven capitalist economics, all of which are enabled and maintained by dominant classes in most global societies today—make it virtually impossible for most people among the ultra-poor to improve their condition, no matter how hard they work for several lifetimes (McKeown, 2021).

Privileged classes of societies have traditionally had greater access to deeper learning via private schooling. The more well-resourced schools have historically been able to provide higher-quality education, which presumably lends to deeper learning. Social justice-oriented education leaders, therefore, have greater concern for public school systems that serve the socio-economically poor and traditionally marginalized students, especially those in developing countries (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020a). In these contexts, socio-economically disadvantaged and marginalized populations are made more vulnerable by weak educational systems that enable mostly superficial learning, and which are consequently unable to foster deeply transformative educational experiences. The same

dynamic that Freire (1970) clearly pointed out in his seminal work, *Pedagogy of the Oppressed*, a dynamic he observed through his social engagements as an educator in Brazil during the 1960s, continues to be prevalent in most societies where educational systems do not foster deep learning. Such systems simply continue to enable and maintain the status quo of inequity at the expense of marginalized populations (hooks, 2003). Today's marginalized populations, however, suffer multiple oppressions. Other than bearing the weight and hopelessness of socio-economic poverty and the unfreedom of being pinned down by unjustly structured systems, they are also the most vulnerable to exploitation by opportunistic politicians or corporations, and to the unmitigated effects of environmental crises such as ocean level rise and extreme weather conditions brought about by climate change. For them to participate meaningfully in seeking solutions to these global problems that have the greatest impact on them, fostering deep learning in their educational systems is necessary. Educators will therefore need to foster deeper learning with a view toward promoting social justice in both their immediate educational communities and their wider social contexts.

Statement of the Problem

If educational reforms toward promoting deeper learning in the school settings of socio-economically marginalized communities are to be seriously undertaken towards improving poor basic proficiencies of students, school leaders will need to see and learn from viable systems-oriented reform models of pedagogy, school leadership, and organizational culture that can be appropriated to the local culture and context of the students. At the time this research was conducted, there were no such models in the deeper learning literature which were based on or adapted to the experience in developing countries. While there were studies based on some work

with marginalized students such as ESL learners (Gándara, 2015) and students with disabilities (Noguera et al., 2015), these were conducted in countries such as Canada and the United States, where conditions and local cultures remain vastly different from those of most of the global south.

Educators in developing country contexts in Asia, the Middle East, and Africa have often seen government-initiated educational reform strategies that were derived from reforms being made in North America or Europe (Jackson, 2016). Oftentimes hastily appropriated, these have turned out to be unsuccessful, poorly fit for the local context, and unable to produce the desired results. Such policies are eventually discarded to make way for the next round of reforms, and this results in wasteful expenditure, reform fatigue, and further demoralization of the education communities affected (Jackson, 2016). Theoretical frameworks of these educational reforms were often determined by Western assumptions which were not challenged or critically assessed based on the local realities (Lim & Apple, 2018). Some commentators see this as a form of neocolonialism in education because of the disregard for and consequent erasure of local or indigenous values, an approach that results from the imposition of Western assumptions (Nguyen et al., 2009). To illustrate this hypothetically, if Pellegrino and Hilton's (2011) model for deeper learning schools were to be applied without adjustments to a school community serving children from an indigenous culture, the model's heavy emphasis on developing 21st Century skills and the model's lack of valuing of local cultural heritage and indigenous identity may result in undermining and possibly erasing identity markers such as indigenous language, religion, and family values.

The fact that there were no models in the literature on deeper learning based on developing country contexts signaled the need to explore, not only how fostering deeper learning was achieved through pedagogical and leadership practices and school cultures but also, more fundamentally, what deeper learning itself looked like in marginalized learning communities. Such an exploration has entailed investigating how educators understood, valued and demonstrated concern for deeper learning in their own local school settings and will hopefully lead to broader, more inclusive frameworks on operationalizing deeper learning, frameworks that could more effectively guide education research, policy, and reform.

Research Setting Background

The research setting for this dissertation project was a K-12 mission school to which I assigned the pseudonym Mudita Mission School (MMS). MMS presented as an ideal case study site for such an exploration of deeper learning in a school for students from a socio-economically marginalized community in a developing country context. MMS was established in 2013 as a K-12 mission school that principally catered to students from ultra-low-income families in a rural, underdeveloped region of northern Cambodia. Officially, the MMS was registered as an NGO school, which meant that the school could not charge tuition fees. The school encouraged parents to donate \$50 as an annual counterpart contribution, while it raised the rest of the funds required for operations, mostly from international donors.

MMS was founded by one of the religious orders of the Catholic Church with a strong social-justice orientation and that has schools around the world which serve students from marginalized backgrounds. This social-justice orientation was encoded in the vision and mission statements of the school. The MMS's mission, as articulated in the school's promotional

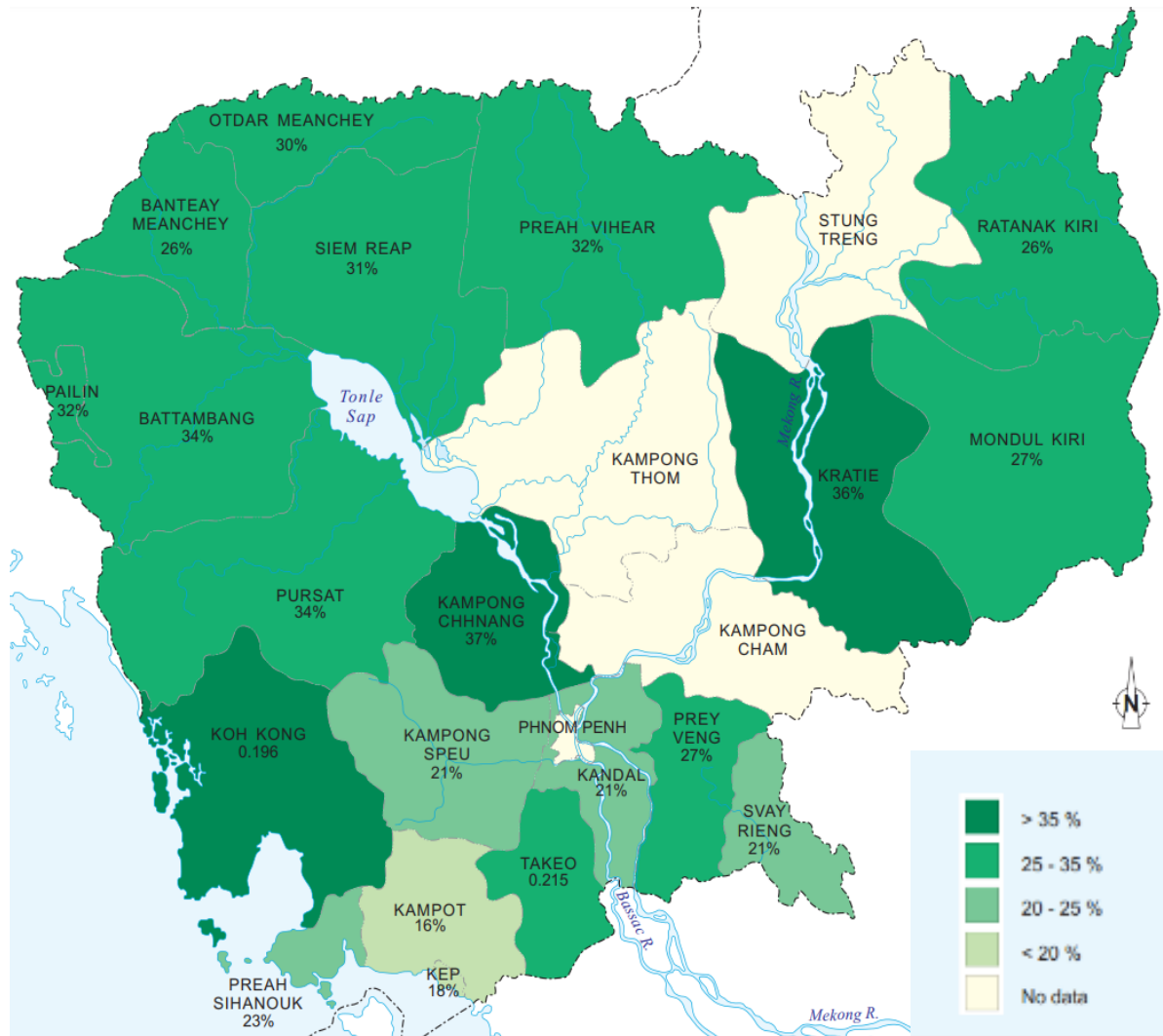
brochure, was “to form young men and women of conscience with competence, compassion and commitment, who will contribute creatively to the building up of a just and democratic Cambodian society while serving and caring for the poor.” The school’s educational objectives are geared towards “the integral development of the whole person”, and the school’s vision was of “a happy learning community within a safe environment where all its members have the courage to discover and choose meaningful life options.” The school’s educational tradition was rooted in the pursuit of “human excellence in learning and teaching while valuing wisdom and spiritual freedom” and the development of “the capacity of each person to care for oneself, others and society.” Underneath the school’s logo are inscribed the words “Dare to Dream of a Brighter Future” (p. 1).

The social-justice orientation of the school’s founders also manifested in their process of selecting the location for the MMS. MMS founders purposefully sought out a rural area of Cambodia among those with the highest incidence of poverty. In 2011, 30% of the population in the province where MMS was built lived below the poverty line, 12% in severe poverty, and 25% of those who lived above the poverty line were highly vulnerable to falling below it (Asian Development Bank [ADB], 2014). Figure 1 illustrates comparative poverty incidence per province across the country, and Table 1 presents detailed poverty indices across provinces, based on data obtained from 2010 to 2011. Also in 2011 the province eventually chosen to house the MMS reported the highest provincial student drop-out rate, 27% (Cambodian Ministry of Education, Youth and Sports [Cambodian MoEYS], 2011). Informal surveys conducted by the school’s founders also noted that the parents of most of the schoolchildren in that province were day laborers in industrial farms of faraway provinces or in factory or construction sites in the

cities of Phnom Penh, Siem Reap, or Bangkok (Q. Poy, personal communication, October 8, 2022). All these socio-economic indicators were factored into the decision to establish the MMS there.

Figure 1

Map of Cambodia With Poverty Incidence by Province, 2010-2011



Note. Adapted from *Cambodia Country Poverty Analysis* (p.29), by the Asian Development Bank, 2014, copyright 2014 by the Asian Development Bank. Reprinted with permission.

Table 1*Multidimensional Poverty Index by Province of Cambodia, 2010*

Region	Multidimensional Poverty Index (MPI = H x A)	Incidence of Poverty (H)	Average Intensity Across the Poor (A)	Percentage of Population Vulnerable to Poverty	Percentage of Population in Severe Poverty	Population Share
Banteay Mean Chey	0.189	43.3%	43.6%	23.0%	11.6%	4.1%
Battambang/Pailin	0.161	36.9%	43.6%	24.5%	8.7%	7.3%
Kampong Cham	0.239	51.6%	46.4%	17.8%	20.0%	11.7%
Kampong Chhnang	0.277	57.1%	48.5%	26.6%	23.3%	4.1%
Kampong Speu	0.213	47.4%	45.0%	25.9%	13.6%	5.9%
Kampong Thom	0.271	58.0%	46.7%	19.6%	23.8%	5.0%
Kampot/Kep	0.216	47.7%	45.3%	27.7%	15.9%	4.9%
Kandal	0.170	38.9%	43.8%	26.3%	11.9%	9.5%
Kratie	0.309	59.1%	52.3%	22.8%	29.3%	2.6%
Mondol Kiri/Rattanak Kiri	0.409	71.0%	57.6%	12.4%	43.9%	1.5%
Otdar Mean Chey	0.233	49.6%	47.0%	23.1%	18.5%	1.4%
Phnom Penh	0.028	6.6%	42.4%	13.0%	1.5%	9.7%
Preah Sihanouk/Koh Kong	0.196	38.8%	50.6%	21.4%	18.3%	2.2%
Preah Vihear/Steung Treng	0.369	71.2%	51.8%	17.3%	39.1%	2.4%
Prey Veng	0.223	52.4%	42.6%	17.0%	19.4%	7.7%
Pursat	0.284	57.9%	49.0%	27.4%	24.5%	3.2%
Siem Reap	0.240	51.8%	46.3%	24.6%	19.4%	6.4%
Svay Rieng	0.229	53.6%	42.7%	18.0%	19.1%	3.7%
Takeo	0.245	54.1%	45.3%	22.2%	18.8%	6.6%

Note. From *Country Briefing: Cambodia* (Oxford Poverty and Human Development Initiative, 2013), as printed in *Cambodia Country Poverty Analysis* (p. 34) by the Asian Development Bank, 2014, copyright 2014 by the Asian Development Bank. Reprinted with permission.

Alongside having to endure deep-seated and widespread poverty, Cambodian schoolchildren, especially those in rural areas such as the province where MMS was located, had to contend with the poor state of the Cambodian public school system. Cambodian public

schools are characterized in the literature as rote-learning systems bereft of arts and music education (Bray et al., 2016; Brehm, 2021), having vast teacher training needs in pedagogy and curriculum development (Hammond, 2018; Ogisu, 2022), and where Cambodian students perform poorly compared to students of the nation's Southeast Asian neighbors, with only 8-10% achieving the minimum level of reading and math proficiency (Cambodian MoEYS, 2018). Corruption has been widespread in the form of the systemic practice of teachers soliciting illicit school fees for "supplementary" tutorial classes during which time all the critical lessons are taught (Brehm, 2021; Hammond, 2018). Commentators have pointed out the impacts of such a system that amplifies inequity (Marshall & Fukao, 2019) and inadvertently promotes a *pedagogy of uncare* and exploitation among Cambodia's young (Brehm, 2016). The problem of inequity has also been compounded by decades of educational development policies that have favored urban school populations, and the coronavirus pandemic has further exacerbated this problem, with greater learning loss reported by schoolchildren in rural areas where many students could not access remote learning modalities for lack of a cellular phone, computer, or Wi-Fi access in their homes (Kanika, 2020).

Against this backdrop, founders of the MMS and Catholic educators in Cambodia considered the MMS to be a beacon of hope for educational possibilities for Cambodian children. The brand of Catholic education furthered by the Catholic order that founded the MMS has had a longstanding reputation of promoting a kind of education (i.e., *liberal education*) that promotes the holistic (intellectual, psycho-emotional, spiritual and physical) development of individuals towards forming men and women who will embody the Christian values of service and concern for the common good. In doing so, their schools have become known to employ

pedagogical practices that develop critical thinking, reflection, and action guided by critical discernment that addresses social and global issues. While deeper-learning terminology has not often been used in these Catholic schools, elements of deeper learning identified in the introduction of this study are easily identifiable in their educational tradition.

Around the time of the inception and planning stages of the MMS, Catholic education leaders began to emphasize the need for educators in Catholic institutions around the world to look more closely at how schools could help counter “the globalization of superficiality” (Nicolas, 2010, p. 2). This referred to the multivarious ways that technological developments and globalization were immersing students of the present generation in shallow ways of learning about, relating to, and engaging in the world. Thus, the shaping of the MMS’s mission and vision and the founding of the school had these three major influences: (a) the social-justice orientation of its founders; (b) their longstanding tradition that promoted deep learning through liberal education; and (c) the explicit intention to seriously address seriously the deeper learning needs of this generation of students. MMS was therefore a concrete and localized response meant to contribute to deeper learning in Cambodia.

Reports from the school about their initial successes highlighted how the establishment of the MMS ushered in a new micro-education environment with much promise, making it an ideal research setting for this exploratory case study. After its first ten years of operation, MMS’s experience of providing quality education in line with the Catholic liberal education tradition presented a unique opportunity for understanding deeper learning in the Cambodian context. Prior to this research, there were reasonable indicators of the school’s moderate success in furthering their liberal education goals based on their quarterly newsletters, annual reports,

international donor support, and my initial dealings with the school. Those dealings and initial indicators are what prompted this inquiry and further exploration of their reported success in promoting educational objectives in line with deeper learning.

Purpose of the Study

The purpose of this study was to explore deeper learning in the MMS, a K-12 mission school for students from poor socio-economic backgrounds in a rural area of Northern Cambodia, to investigate deep learning practices fostered there, and to highlight key challenges and opportunities for doing so at this present time. Toward this end, I employed qualitative research methods, in particular, the case study methodology. For data collection, I conducted interviews, focus groups, and on-site observations. Respondents included teachers, administrators, and students of the lower secondary school (Grades 7-9) and upper secondary school (Grades 10-12). I also gathered and reviewed available school documents (reports, strategic plans, minutes of meetings, etc.) and promotional materials (videos, brochures, webpage content, school blogs), both those on-line and in the school archives.

Research Questions

My primary question for this research was “What does a deeper learning school look like in Cambodia today?” Secondary questions in support of this primary research focus were “What practices to promote deeper learning are effectively employed there?”, “Why is deep learning deemed important by teachers, administrators, and students there?”, and “What opportunities and challenges did they face in promoting deeper learning?”

Significance of the Study

This study can potentially impact the educational community in Cambodia on several levels. On the national level, the public school system for basic education can benefit from a viable, working model for promoting deeper learning in rural schools. Although MMS was not a public school, this case study highlighted replicable aspects of school and classroom management that can be promoted in the public system of 12,139 rural schools across the country. This study has also contributed to the limited body of empirical research that helps to shape educational systems reform policies in the country in support of deeper learning.

As of 2021, there were 80,000 teachers and 2.6 million students in rural public schools across Cambodia (Cambodian MoEYS, 2021). Teachers and school administrators who are a part of this system can be helped by this case study, which has identified ways to experiment with changes in pedagogies, school environments, and policies towards improving student achievement and school performance through deeper learning. Cambodian public-school students will potentially benefit from the ways that this research has shed light on critical pathways towards deeper learning.

Recent literature on Cambodian basic educational reform has been scarce and limited mainly to pedagogy and teacher training (Berkvens, 2017; Ogisu, 2014, 2022; Tan, 2010; Tandon & Fukao, 2015) and primary school leadership (Kheang et al., 2018). The deeper learning paradigms, however, require wider systems-approaches to understanding and implementing effective reforms. Fullan et al. (2018), for example, emphasizes the importance not only of pedagogies, but also of learning partnerships, leveraging digital technologies, and enabling learning environments in deeper learning designs, and how these are situated in

organizational cultures in which the students are immersed. Contemporary education reformers insist that, for effective educational reform to take root, systems-change approaches are necessary (Fullan, 2020; NEA Foundation, 2012; Owens & Valesky, 2015). These approaches are holistic and consider broader integrated approaches to pedagogical reforms and teacher training, as well as to the various components of the educational environment that affect children in schools. Such approaches are based on decades of educational reform experience that have shown how disjointed, piecemeal solutions ultimately remain ineffective, wasteful, and demoralizing for school communities that seek to improve the quality of education for their children (Fullan, 2020). While there has been a growing body of literature on systems-change approaches towards deeper learning, there have been no studies to date that were based on experiences in Cambodia or in similar developing-country contexts. This study sought to illuminate these neglected aspects of educational reform.

This study also sought to benefit the global education-research community by expanding perspectives on what deeper learning entails, especially in contexts previously undocumented by the literature. Since no studies had been conducted on deeper learning schools in developing-country contexts as of this writing, this case study is hopefully a forerunner that will prompt other education researchers who work in similar contexts to do complementary work.

Finally, the MMS community of teachers, administrators, and students also benefited from the communal process of reflection on the educational objectives of the school. Through their participation in the interviews and focus group discussions and through reflection on the outcomes of this research, this study afforded them an opportunity to revisit and think more

deeply about their hopes, values, and educational concerns. My hope was that this process would have strengthened their own resolve, commitment, and capacity to foster deeper learning.

Conceptual Framework

There were two bodies of research from which I derived concepts for this case study's framework. First was the work of Canadian global education reform leader Michael Fullan (2014) and his colleagues at the New Pedagogies for Deep Learning (NPDL), a global partnership with members from 1,300 schools across eight countries (New Pedagogies for Deep Learning [NPDL], 2019). The experience of these member schools was effectively where the studies on deeper learning approaches were based, from which came Fullan et al.'s (2018) paradigm for deeper learning design. The second was the work of education researchers Jal Mehta and Sarah Fine (2019) from the Harvard Graduate School of Education, who conducted a six-year qualitative study on 30 deeper-learning high schools across the United States.

Fullan et al. (2014) identified deeper learning as an opportunity being presented by new pedagogies emerging from evolving school environments. These new pedagogies involved not only the new digital tools and resources provided by technological advancement, but also the changing nature of effective teacher-student and peer relationships in the pedagogical schema. Both teachers and fellow students, to a greater extent, were seen by students as learning partners and co-activators of the learning process. Fullan explained:

Technology has unleashed learning, and the potential for students to apply knowledge in the world outside of school; new pedagogies leverage all of this in the formal learning process. Teaching shifts from focusing on covering all required content to focusing on the learning process, developing students' ability to lead their own learning and to do things with their learning. Teachers are partners with students in deep learning tasks characterized by exploration, connectedness and broader, real-world purposes (Fullan et al., 2014, p. 7).

In this new paradigm, deeper learning was defined as “creating and using new knowledge in the world”, thus furthering an understanding of deeper learning that allowed students to go “beyond the mastery of existing content knowledge.” The new learning outcomes were seen in terms of students’ “1) capacities to build new knowledge and to lead their own learning effectively, 2) proactive dispositions and their abilities to persevere through challenges, and 3) the development of citizens who are life-long learners.” (Fullan et al., 2014, p. 20)

This paradigm of deep learning counted among its goals the development of competencies here articulated as “6Cs” : (a) *Character* (honesty, self-regulation and responsibility, hard work, perseverance, empathy for contributing to the safety and benefit of others, self-confidence, personal health and well-being, career and life skills); (b) *Citizenship* (global knowledge, sensitivity to and respect for other cultures, active involvement in addressing issues of human and environmental sustainability); (c) *Communication* (effective oral, written, and digital communications; listening skills); (d) *Critical thinking and problem solving* (think critically to design and manage projects, solve problems, and make effective decisions using a variety of digital tools and resources); (e) *Collaboration* (working in teams, learning from and contributing to the learning of others, social networking skills, empathy in working with diverse others); (f) *Creativity and imagination* (economic and social entrepreneurialism, considering and pursuing novel ideas, and leadership for action) (Fullan et al., 2014).

Some years after this paradigm was first introduced, Fullan et al. (2018) updated their definition of *deep learning* to “quality learning that sticks with you the rest of your life, that engages the world and changes the world”. Other characteristics of deep learning are that it ignites passions, builds team-spirit, involves the application, analysis, evaluation and creation of

knowledge (i.e., the higher-order skills according to Bloom's taxonomy [Armstrong, 2010]), and "occurs when students use the competencies to engage issues and tasks of value to students and the world" (Fullan et al., 2018). This understanding of deep learning, together with the identified goals (i.e., competencies), were used as *a priori* frames to explore how deep learning was promoted in the MMS.

Mehta and Fine (2019), upon studying the progress of deeper learning schools in the United States, proposed that powerful learning experiences emerge from the intersection of *identity*, *mastery*, and *creativity*. *Mastery* was tied to "substantive knowledge of content, transfer of this knowledge, pattern recognition and expertise, and understanding the structure of a field or discipline"; *identity* to "intrinsic motivation, the way it is fueled by learners' perceptions of the relevance of the content, and the way in which learning becomes deeper as it becomes a core part of the self"; and *creativity* to "the shift from receiving the accumulated knowledge of a subject or domain to being able to act or make something within that field; taking this step builds on one's understanding of a domain" (Mehta & Fine, 2019, p. 16). These powerful learning experiences became matter for deeper learning when they were taken through structured arcs of learning. These arcs of learning consisted of pedagogical process trajectories across extended time periods, supported by value-systems and community dynamics. For this study, I referred to *mastery*, *identity*, *creativity*, *powerful learning experiences*, and *arcs of learning* as the components of deeper learning. These concepts served as lenses through which I have examined how deeper learning was operationalized in the MMS.

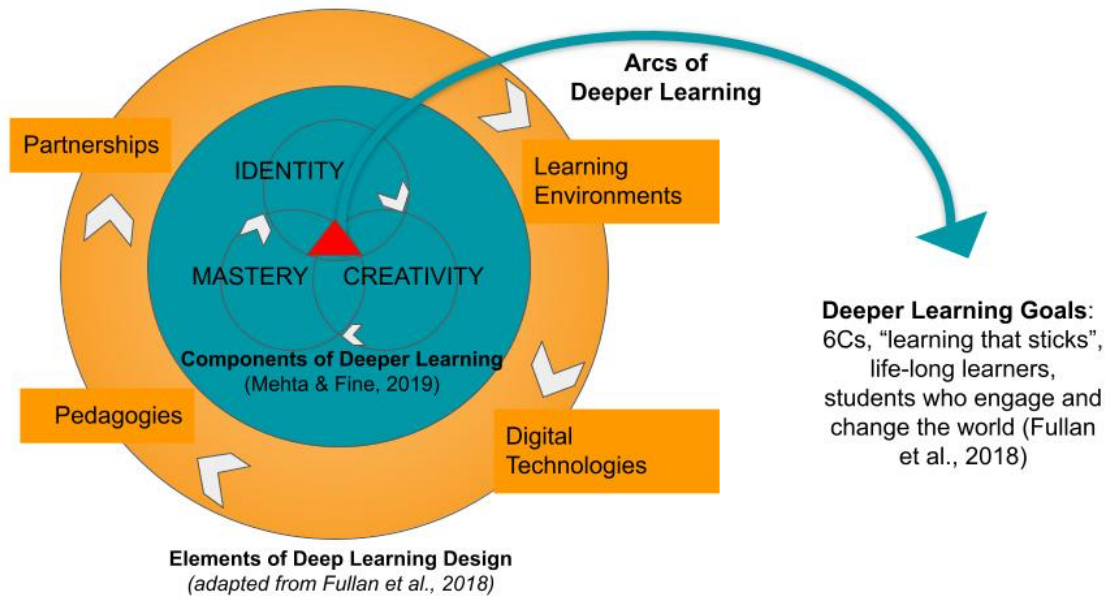
Finally, Fullan et al. (2018) also identified the four Elements of Deep Learning Design, namely, (a) New Pedagogies; (b) Learning Environments; (c) Learning Partnerships; and (d)

Leveraging Digital. These categories were used to identify the different approaches to promoting deeper learning in the MMS, as well as in examining the opportunities and challenges in promoting deeper learning there.

Figure 2 illustrates the relationship of these concepts and their place in this framework for promoting deep learning.

Figure 2

Conceptual Framework for Promoting Deep Learning



Note. Adapted from *Deeper Learning: Engage the World, Change the World*, by M. Fullan et al., 2018, Corwin, copyright 2018 by New Pedagogies for Deep Learning; *In Search of Deeper Learning*, by J. Mehta and S. Fine, 2019, Harvard University, copyright 2019 by J. Mehta and S. Fine.

Research Design and Methodology

For this exploration of deeper learning in Cambodia, I chose to employ qualitative research methods towards an embedded, single-case study design (Yin, 2018) focusing on the MMS as the singular site for data collection but investigating multiple sub-cases of deeper learning there. Although this was a singular case study on the experience of one particular

school, I investigated several instances or *sub-cases* of how powerful learning experiences were enabled to foster deeper learning. These sub-cases were subsumed into a systemic view which framed the school community as one integrated system. This research design dovetailed with the assertion that, in order to effectively implement educational reform, systems-thinking must be applied to approaches towards problem solving (Fullan, 2020; Owens & Valesky, 2015).

The meta-theory that guided this inquiry was Critical Realism, a branch of philosophy that originated from the works of Rom Harré and Edward Madden (1975), and Roy Bhaskar (2008). Critical Realism, applied to educational research, implies that there are realities which exist independent of a learner (i.e., that they are ontological), but that a learner comes to know or access through socially-constructed schemas of knowledge and understanding, albeit always in a limited capacity that precludes absolute certainty of the perfect correspondence between the known object and what the learner knows of it (Porpora, 2015). Significant to this research, critical realists have asserted that “meta-theory influences the way data are collected and analyzed about the social world” (para. 5) and that understanding evolves, and, with it, so does reality (Scott, 2005). This exploration, therefore, sought to investigate both the experience of deeper learning as well the ways that this experience was understood and controlled within in a context that has thus far been overlooked by previous research, thereby expanding the intersubjectivity on which *deeper learning* frameworks are based.

For data collection, I conducted interviews, focus groups, and on-site observations. Respondents included five teachers, three administrators, one teacher-administrator, and 18 students of the MMS secondary school, all purposively sampled for this study (N = 27). All focus-groups and most of the interviews were conducted in the Khmer language, with the

exception of the interviews of three administrators who were non-Cambodians, with whom I conducted the interviews in English. In total, I conducted nine semi-structured interviews with faculty and staff of the school, and each took 45 to 60-minutes. I also conducted three semi-structured focus group discussions with five to eight participants each, and 18 student participants in total. I conducted all the interviews, focus groups, and classroom and campus observations over the course of 21 days spread across the three months of August, September, and October of 2022, during which time I lived on the MMS campus in the faculty housing facility for non-Cambodian teachers. During the data collection period I also produced seven reflective memos and ten detailed field/classroom observation notes. Living on the campus allowed me an immersive experience and various informal engagements which allowed me to establish relationships and to build trust, which was essential to my data gathering process. Additionally, I studied documents, archival records, and artifacts (e.g., reports, strategic plans, lesson plans, promotional materials, videos, brochures, webpage content, school blogs, etc.) pertinent to the school's deeper learning approaches. Further details on the research design and methodology are presented in Chapter 3.

Limitations

As a single case study, one major limitation of this research was the generalizability of the findings. Some approaches to deeper learning that were found effective in MMS may not necessarily be applicable to other contexts. Nonetheless, given the exploratory nature of this research and this framework for education, the insight into approaches to deeper learning in this Cambodian setting can enlighten future initiatives toward education reform in general, and, more

particularly, on ways teachers and schools in Cambodia can experiment with enabling deeper learning.

This study also did not attempt to measure the scope or extent of the effectiveness of deeper learning approaches in the MMS. It did not seek to establish MMS as a model school. Rather, it only sought out cases of deeper learning and its enabling factors that were present there.

Additionally, this research was also unable to examine longitudinal factors that come into play with deeper learning (e.g., dispositions instilled earlier in childhood, or those being instilled in school but which would manifest effects later in life). Also, this study was unable to measure or correlate the impact of historical occurrences (e.g., the COVID-19 pandemic and remote learning) and their impact on deeper learning.

Delimitations

Although there were inductive approaches that could have been employed for a study on this topic (i.e., a grounded theory approach to determining the meaning of deeper learning in Cambodia) I chose a deductive approach with an *a priori* framework for understanding deeper learning due to my own limitations of linguistic proficiency, time constraints, and the availability of participants. A grounded theory approach would have required greater language proficiency and a background in Khmer philosophy and linguistics which I do not have. It would also have required larger amounts of time to invest in data analysis and in several repetitions of focus groups and consultations which I and the respondents of the case study were unable to offer.

At the onset, I had also chosen to de-limit this study to a descriptive approach (versus an evaluative approach) to reporting about deeper learning in the chosen research setting. Despite

the alignment of the MMS's approaches to the deeper learning paradigm, the school had not expressly adopted this framework. It would therefore have been unfair to measure or evaluate the school's performance against parameters it had not taken as its own.

While Fullan et al.'s (2018) paradigm for deeper learning design considered the macro-education environment (i.e., the district, regional and national levels of enabling leadership and policy) to be a determinant of deeper learning, I chose to limit the focus of this study to the immediate classroom and school environments in which deeper learning was taking place. I made this choice firstly because these were the factors over which school leaders and educators had the greatest control and secondly because the complications of dealing with an authoritarian government made it difficult to conduct empirical research involving government agencies in Cambodia.

Due to time constraints, I also limited the focus of this study to the secondary school division of MMS. Although deeper learning practices may already have been applied at lower grade levels of the school, I delimited this study to allow for greater manageability and depth in data gathering and analysis. This was also in line with most of the models of deeper learning that focused on high schools because of the age-appropriateness of several deeper learning pedagogies and the level of cognitive development required of many deeper learning tasks.

CHAPTER 2

REVIEW OF THE LITERATURE

The first section of this review of literature focuses on a broad, historical overview of deep learning and how it has been defined and studied throughout the past five decades. The studies cited here have helped to shape educational policy, to improve pedagogy, and to deepen the understanding and requisites of student learning. While this is not an exhaustive review, it is comprehensive in terms of the development of the understanding and appreciation of this topic and sufficient in relation to the educational needs identified in this dissertation. The significance of presenting a historical overview as part of this review of literature relates to the exploratory nature of this study. Although a deductive approach was to be used for this case study (i.e., with an *a priori* concept for deeper learning based on paradigms discussed in the second section of this chapter), this historical background on the development of the concept and understanding of deeper learning allowed me a wider perspective on the subject. This wider perspective, in turn, allowed for an openness to developing a global understanding of deeper learning based on the data gathered for this case study.

The second section of this chapter deals with dimensions of deeper learning. These involve the cognitive and affective dimensions, competencies, critical pathways, and elements and benefits of deeper learning design in schools, all of which are considered in the conceptual framework of this research. The structure and categories used in the second section of this chapter guided the data gathering process for the case study conducted in the MMS.

The third section of this chapter situates deeper learning in Cambodia. It provides a brief historical overview of the development of the Cambodian educational system, highlighting

events that may be impacting the challenges and opportunities for promoting deeper learning in the MMS today.

Deep Learning Through the Decades

Studies on deep learning have come in three successive waves over the past five decades, with each wave differing in approach, focus, and emphases. The first wave of the research, which came roughly from 1976 to 2013, focused on *depth* in terms of the cognitive processes involved in student learning. The second wave of the research, from around 2010 to 2019, focused on sociological aspects involved in deeper learning (i.e., on what fostered deeper learning in school contexts) and argued that deeper learning was necessary for preparing students for university studies or work-engagements in the 21st century. The third wave of the research (its literature scarce but steadily growing over the past few years) has involved the exploration of the philosophical underpinnings of deep learning in the context of the evolving nature of reality, human understanding of truth, and the dis-orientation deep learning allows students to resolve, over and beyond acquiring 21st Century skills. Commentators in this emerging field have highlighted the disorienting nature of the *post-truth* age, in which deep social polarization has been common, the rampant proliferation and weaponization of fake news has been evident, and social-media and the internet have become main drivers of the way information is created, shared, and processed.

The First Wave of Deeper Learning Studies (1976-2013)

Deep-Level and Surface-Level Processing

Among the first researchers in the field of educational psychology to study carefully the differences between *surface-level* and *deep-level* processing and to focus on cognitive processes

that were employed beyond memorization and on knowledge retention among student learners were Marton and Säljö (1976). Their seminal work on student learning involved a series of experiments with university students in Sweden. In sample sizes of 30-40 students per experiment, research participants were individually presented with textual material (e.g., an essay, a section of a book chapter, or a newspaper article) which they were asked to read and were then interviewed individually to determine what they had understood and remembered of the material. Interviews were recorded and subsequently studied for patterns of responses, hesitations, various attempts at recalling the material that had been read, retained content, and what each understood of the presented texts.

Marton and Säljö (1976) proposed that variations in the way students understood, interpreted, and assigned meaning to a particular text accounted for differing levels of comprehension and depth in terms of how the same content was processed. These variations in the learning outcomes allowed the researchers to hypothesize, and to confirm by subsequent experiments, that various levels of learning outcomes were contingent on different ways that students studied the texts. Students who focused on the signs (e.g., memorizing the words and sentences from the text) had responses corresponding to lower levels of learning outcomes, as opposed to students who focused on trying to understand that which was signified by the text (i.e., the text's meaning). Deep learning was therefore associated with *meaning making*. In their conclusion, Marton and Säljö suggested that deep learning is *meaningful* learning.

Whereas the common practice in psychological studies on learning of that time was to measure the number of correct answers that students could provide in a standardized test (i.e., to measure the breadth of knowledge attained), this study argued that “Both for instructional

purposes and for the understanding of ‘what it takes to learn’ a description of what is learned is preferable to the description of how much they learn” (Marton & Säljö, 1976, p. 9). Eventually, Entwistle and Ramsden (1983) would affirm these findings of Marton and Säljö (1976) with follow-up studies on university students’ learning approaches in England and Sweden. They also further highlighted how deeper learning involved meaning-making on a personal level for the learner.

Motivation and Strategy

Some years later, Biggs (1987) and the Australian Council for Educational Research developed a model for student learning complementing Marton and Säljö’s (1976), but framed depth as a function of student motivation and strategy. According to Biggs (1987), students with a Surface Motive (SM) sought to meet the school requirements minimally, finding “the balance between working too hard and failing”. Students with Deep Motive (DM) sought “to actualize interest and competence in particular academic subjects.” A third type of determining motive was identified as the Achieving Motive (AM) and was based on competition and ego-enhancement, prodding students to “obtain the highest grades, whether or not [the] material is interesting” (p. 11). Regarding strategy, Surface Strategy (SS) is reproductive, comprised mainly of targeting the bare minimum requirements and employing rote learning. Deep Strategy (DS) is meaningful, involves “reading widely, and employs inter-relating with previous relevant knowledge.” The Achieving Strategy (AS) involves “organization of one’s time and working space” and that one “behave as ‘model student’” (p. 11).

This motivation-strategy model was derived from a factor analysis conducted on three independent studies which originally used a 10-scale survey. The original survey measured for

the following traits: (a) Pragmatism (grade-orientation; seeing university qualifications as a means to some other end); (b) Academic motivation (being intrinsically motivated; seeing university study as an end in itself); (c) Academic neuroticism (the level of being overwhelmed and confused by the demands of course work); (d) Internality (use of internal, self-determined standards of truth, not external authority); (e) Study skills (working consistently, reviewing regularly, scheduling work); (f) Rote learning (focusing on facts and details and memorizing them); (g) Meaningful learning (reads widely and relating material to what is already known; oriented to understanding all input material); (h) Test anxiety (worries about tests, exams, fear of failure); (i) Openness (seeing university as a place where values are questioned); (j) Class dependence (reliance on class structure, rare questioning of lecturers or texts; Biggs, 1987, p. 7).

The original study that analyzed these ten scales was conducted with three independent groups: first, with 420 Canadian university freshmen enrolled in English and Chemistry classes, the questionnaires were administered by post and completed voluntarily; second, with Australian university students in their Diploma in Education year, questionnaires were administered during regular class hours; lastly, with a different group of 148 Australian Diploma in Education students, the questionnaires were picked up, completed, and returned on a voluntary basis. Researchers themselves were surprised by the results of the statistical analysis that supported the three emergent factors (surface, deep or achieving), “considering the different levels of students tested, subject areas, countries, and conditions of administration” (Biggs, 1987, p. 8).

Subsequent studies that employed and confirmed this motivation-strategy model for deep learning were conducted over the course of almost 20 years and culminated in a nationwide study that involved seven territories or states of Australia. Two populations were studied via

purposive sampling, the first with 1,986 students in Grades 9-11, selected from state, Catholic, and independent schools, purposively sampled to represent the total Australian student population of that educational level; the second was conducted with approximately 1,000 students from tertiary education levels, across the Arts, Education, and Science fields of study. Resource constraints limited the study to larger samples from fewer schools, each with both undergraduate and graduate level programs, still allowing comparisons between sectors.

Two survey questionnaires, the Learning Process Questionnaire (LPQ) for university and graduate students and the Study Process Questionnaire (SPQ) for secondary school students were developed by Biggs (1987) based on the three factor (surface-deep-achieving) model. These questionnaires and other similar tools which also operationalized the categories of deep and surface learning (Entwistle & Ramsden, 1983) would later be used in quantitative research in countries such as South Africa (Akande, 1998), Nepal (Watkins & Regmi, 1996), the Fiji Islands (Phan & Deo, 2007), Malaysia (Watkins & Ismail, 1994), Finland (Eklund-Myrskog & Wenestam, 1999), Nigeria (Watkins & Akande, 1994), South Africa (Watkins & MBoya, 1997), and the Philippines (Bernardo, 2003). While these various studies yielded ambiguous results in terms of validating the three factor-model (which included the Achieving Approach), all yielded positive results in validating the two factors of surface and deep approaches to learning across various cultural contexts.

Findings of these studies significant to this dissertation have suggested that deep learning motives and strategies have positive correlations with age and educational levels. Surface learning approaches, on the other hand, have an inverse relationship to these two variables. These are indicative of how the development of deep learning approaches is a process aligned to

the developmental growth of students, one that can therefore be aided (or hampered) by leadership, school cultures, and other determinants of cognitive and psycho-social development.

Upon reviewing Marton and Säljö (1976), Biggs (1987), and other studies such as Van Rossum and Schenk (1984), Watkins and Regmi (1996) highlighted how high-quality learning outcomes that result from deep-level learning strategies do not necessarily translate to good grades. Furthermore, Watkins and Regmi (1996) asserted that, based on Biggs' (1987) model, "the most important personal factor in the adoption of a deep-level approach is the degree to which students are aware of and have control over their own learning process" (Watkins & Regmi, 1996, p. 550). This awareness and control over one's own learning process is what Biggs (1987) earlier called *metacognition* or *meta-learning*.

Frăsineanu (2013) suggested that deep learning is facilitated not only by supporting student motivation, clarifying learning goals, and encouraging the assuming of one's own responsibility for the learning process, but also by fostering *reflection*. His doctoral study research conducted on 425 undergraduate students from four universities in Romania supported that all these meta-cognitive processes positively and significantly influence deeper learning.

The conceptual framework employed by Frăsineanu (2013) furthered an understanding of deep learning as learning that was personally meaningful, and reflexive, and that employed links to other areas of previously acquired knowledge. Superficial learning, on the other hand, was primarily characterized by rote memorization. The research involved student surveys, FGDs, participant observation, document analyses, interviews, and case studies on three groups: an experimental group, an internal control group, and an external control group. Data was processed

both qualitatively (by reflection, in further discussions with participants and analysis) and quantitatively, using the Statistical Package for the Social Sciences (SPSS).

Fräsineanu's (2013) findings suggested that the hallmarks of deep learning practices for students include these: preparing for lecture and seminar activities, engaging colleagues in group study or discussions, engaging in debates, arguing for one's opinion, employing logic, identifying links between theory and practice or other connections, re-structuring contents, establishing hierarchies, solving tasks, employing greater focus, and developing new ideas. Those who engaged in deeper learning processes had a better grasp of knowledge and were more effective in solving tasks autonomously. Furthermore, deeper learning was seen to have positive effects on emotional control and self-esteem.

In summary, this first wave of research on deep learning conducted from 1976-2013 in Sweden, Australia, and Romania includes seminal works that established deep learning on the level of meaning-making (i.e., when learners focus more on the signified than on the signs; Marton & Säljö, 1976) and that associated deep learning with depth of motivation and strategy, with the learner's awareness of and control over the learning process (i.e., metacognition or meta-learning; Biggs, 1987), and with associating new information with previously acquired knowledge and reflection on self-actualization (Fräsineanu, 2013). These initial studies were motivated by the scientific interest in processes involved in student learning and the implications for improving the experience of school for students (Biggs, 1987; Fräsineanu, 2013; Marton & Säljö, 1976). Succeeding studies conducted in other European countries, as well as in Africa and the Asia-Pacific Region, have suggested the validity of the findings of these seminal works across other cultures.

The Second Wave: Developing 21st Century Competencies (2010-2019)

The second wave of the research, from around 2010 to 2019, focused on sociological aspects involved in deeper learning (i.e., on what fostered deeper learning in school contexts) and argued that deeper learning was necessary for preparing students for university studies or work-engagements in the 21st century. Beginning in 2010, philanthropic institutions such as the William and Flora Hewlett Foundation in the United States began to identify “deeper learning” as an educational goal that would create greater impact in the education and lives of students (Chow, 2010). This led to research that framed “deeper learning” as involving the enhancement of skills which enable students to successfully engage “21st century challenges”, whether in the University setting or in the job market. These competencies were later elaborated as (a) mastery of core content, (b) critical thinking and problem-solving, (c) working collaboratively in groups, (d) effective communication, and (e) developing an academic mindset (Chow, 2010). Shortly after this, in 2012, the results of the Programme for International Student Assessment (PISA), run by the OECD, were released and caused alarm for educational leaders in the United States because the results suggested that the critical thinking skills of 15-year-old Americans had stagnated, while that of their peers in several countries around the world had progressed (Bellanca, 2014).

Emergence of an American Paradigm for Deeper Learning

In the same year, the National Research Council (NRC) of the United States released the project report of a study funded by a conglomerate of the largest private sector foundations that fund educational development in the country, entitled Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century. The study was conducted by a

committee that reviewed literature across the disciplines of cognitive science, educational and social psychology, economics, child and adolescent development, literacy, mathematics and science education, psychometrics, educational technology, and human resource development, as well as various NRC workshop proceedings on the relationships between the development of 21st century skills and science education and educational assessment (Pellegrino & Hilton, 2012).

Authors of the report defined deeper learning as “the process through which an individual becomes capable of taking what was learned in one situation and applying it to new situations” (Pellegrino & Hilton, 2012, p. 5). Other educational researchers who supported the development of this paradigm, such as Linda Darling-Hammond, would define deeper learning in similar in terms, as “the process of fusing content knowledge with real-world situations” whereby students “transfer” knowledge rather than just memorize it” (Towler, 2014).

The following quotations illustrate how this paradigm was framed by the context of the success-oriented market demands of the present time:

Success in work and life in the 21st century is associated with cognitive, intrapersonal, and interpersonal competencies that allow individuals to adapt effectively to changing situations rather than to rely solely on well-worn procedures. When the goal is to prepare students to be able to be successful in solving new problems and adapting to new situations, then deeper learning is called for. Calls for such 21st century skills as innovation, creativity, and creative problem solving can also be seen as calls for deeper learning— helping students develop transferable knowledge that can be applied to solve new problems or respond effectively to new situations. . . .

We define deeper learning not as a product but as processing—both within individual minds and through social interactions in a community—and 21st century competencies as the learning outcomes of this processing in the form of transferable knowledge and skills that result. The transferable knowledge and skills encompass all three domains of competency: cognitive, intrapersonal, and interpersonal, in part reflecting the sociocultural perspective of learning as a process grounded in social relationships. (Pellegrino & Hilton, 2012, p. 70-74)

This paradigm promoted by the NRC proposes that deeper learning involves the following aspects of cognitive processing: (a) the capacity to apply knowledge to different contexts or new situations (knowledge transfer); (b) the organization of knowledge so that it can be readily retrievable and to applicable to new problems; (c) extensive practice, guided by explanatory feedback that helps learners correct errors; (d) understanding the structures of problems; (e) integrating new information with prior knowledge (Pellegrino and Hilton, 2012). The NCR paradigm would eventually be employed in a series of studies that would examine various aspects of deeper learning, including how to teach for deeper learning (Lampert, 2015), systems of assessing deeper learning (D. Conley, 2015; D. T. Conley & Darling-Hammond, 2013), and outcomes of deeper learning (Taylor, 2014). Part of the research using this paradigm would pay particular attention to equity in deeper learning (Noguera et al., 2015) and how deeper learning programs were being implemented for traditionally marginalized students, such as adolescent immigrants, English language learners (Gándara, 2015), and students with disabilities (Vaughn et al., 2015).

Emergence of a Global Paradigm for Deeper Learning

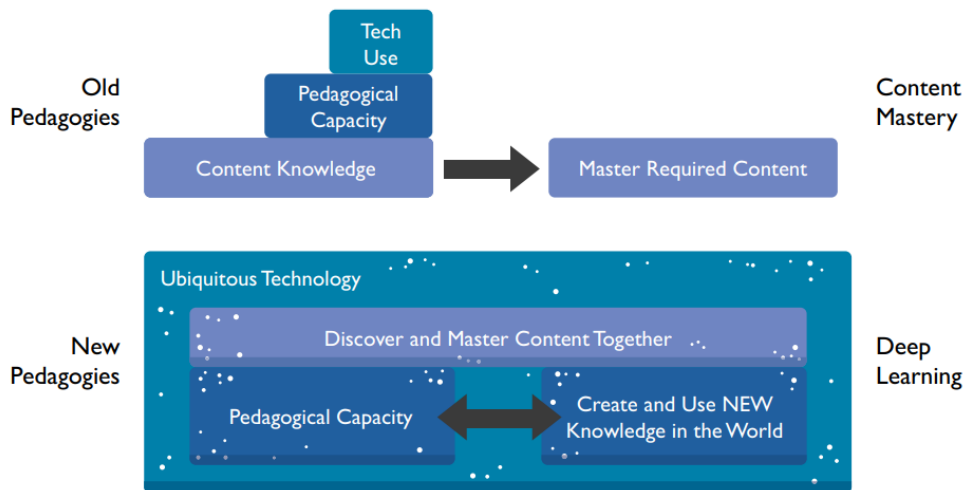
In 2014, another deeper learning paradigm emerged, this time, from Canada. Fullan et al. (2014) identified deeper learning as the opportunity being presented by new pedagogies emerging from the evolving school environments. These new pedagogies involved not only the new digital tools and resources provided by technological advancement, but also the changing nature of effective teacher-student and peer relationships in the pedagogical schema. Both teachers and fellow students were increasingly seen by students as learning partners and co-activators of the learning process. Fullan wrote of these new pedagogies:

Technology has unleashed learning, and the potential for students to apply knowledge in the world outside of school; new pedagogies leverage all of this in the formal learning process. Teaching shifts from focusing on covering all required content to focusing on the learning process, developing students’ ability to lead their own learning and to do things with their learning. Teachers are partners with students in deep learning tasks characterized by exploration, connectedness and broader, real-world purposes. (Fullan et al., 2014, p. 7)

In this new paradigm, deep learning was defined as “creating and using new knowledge in the world”, thus furthering an understanding of deep learning that allowed students to go “beyond the mastery of existing content knowledge.” The new learning outcomes, therefore, were seen in terms of students’ “1) capacities to build new knowledge and to lead their own learning effectively, 2) proactive dispositions and their abilities to persevere through challenges, and 3) the development of citizens who are life-long learners.” (Fullan et al., 2014, p. 20)

Figure 3

How New Pedagogies are Different (Fullan & Langworthy, 2014, p. 28)



Note. From A Rich Seam: How New Pedagogies Find Deep Learning (p.28), by M. Fullan and M. Langworthy, 2014, Pearson, copyright 2014 by Pearson. Reprinted under Creative Commons Attribution.

Similarly, this understanding of deep learning was aligned with *future skills* (i.e., the equivalent to the *21st century skills* of the NCR paradigm, but here articulated by Fullan et al.

(2014) as *6Cs*: (a) *Character* (honesty, self-regulation and responsibility, hard work, perseverance, empathy for contributing to the safety and benefit of others, self-confidence, personal health and well-being, career and life skills); (b) *Citizenship* (global knowledge, sensitivity to and respect for other cultures, active involvement in addressing issues of human and environmental sustainability); (c) *Communication* (effective oral, written, and digital communications; listening skills); (d) *Critical thinking* and *problem solving* (think critically to design and manage projects, solve problems, make effective decisions using a variety of digital tools and resources); (e) *Collaboration* (work in teams, learn from and contribute to the learning of others, social networking skills, empathy in working with diverse others); (f) *Creativity* and *imagination* (economic and social entrepreneurialism, considering and pursuing novel ideas, and leadership for action.)

Fullan and Langworthy (2014) also presented deeper learning as an integrated response to battling the global problem of growing inequity in education. Deep learning programs were determined to have greater cost-effectiveness and to cut down educational costs per child to half, compared to programs that relied on infusing the latest technologies with traditional pedagogy. Proponents of this paradigm also insisted that deep learning was inherently a strategy to combat inequity because it countered the natural tendency of teachers to *dumb-down* lessons for students who were lower-performing.

This new paradigm was a product of the content analysis of interviews, stories, learning artifacts (such as lesson plans, videos, and assessment tools), and conversations with students, teachers, school leaders, education system leaders, and policymakers from 12 countries. Eventually, it would be further developed in partnership with 1,200 schools across Australia,

Canada, Finland, New Zealand, the United States, and Uruguay. Some years later, Fullan (2018) presented a definition of deep learning that was further refined based on the findings from the global network's partner schools. This updated definition was "quality learning that sticks with you the rest of your life, that engages the world and changes the world" (p. 9). Other characteristics of deep learning identified by Fullan were that it ignites passions, builds team-spirit, involves the application, analysis, evaluation, and creation of knowledge (i.e., the higher-order skills according to Bloom's taxonomy), and that it occurs when students "use the competencies to engage issues and tasks of value to students and the world" (Fullan et al., 2018, p. 18).

The impetus of this new understanding of educational goals can be understood in this quote which describes the reimagining of learning:

If we want learners who can thrive in turbulent, complex times, apply thinking to new situations, and change the world, we must reimagine learning: what's important to be learned, how learning is fostered, where learning happens, and how we measure success. This means creating environments that challenge, provoke, stimulate, and celebrate learning. We call this new conceptualization of the learning process deep learning, and it must become the new purpose of education. (Fullan et al., 2018, p. 13)

Further Research from the Harvard Graduate School of Education

In 2019, Mehta and Fine of the Harvard Graduate School of Education published their findings from a six-year qualitative study on 30 deeper-learning high schools in the United States, further contributing to the body of literature that views deeper learning as a systems-wide approach to schooling. Their goal was "to study the variety of approaches to deeper learning that schools were taking and to learn from those that were doing the best at this task" (p. 18). Among the schools included in the survey were International Baccalaureate (IB) schools, project-based schools, schools from the Hewlett "deeper learning" network, Charter, State-run public, District-

run public, traditional public, and private schools. All were purposively selected from a list of pooled recommendations of schools with a positive reputation for offering deep learning for high-poverty, working-class, or minority students, whether via rigorous traditional methods, newer schooling models, or a focus on building up 21st century skills.

Mehta and Fine (2019) gleaned the following aspects of deeper learning not articulated in previous studies:

- Deeper learning occurs when various elements of the learning process are integrated, namely, “the cognitive and the affective; the short-term and long term, and the individual and the social” (p. 12).
- Deep learning “emerges from the intersection of the following three elements: mastery, identity, and creativity” (p. 15).
- Deeper learning consists of “powerful learning experiences” or particular classroom moments (e.g., one period of class) that comprise “arcs of learning that develop over time because . . . deep learning is best understood in terms of lengthy trajectories” (p. 16).

Mehta and Fine’s (2019) work included a sub-study which focused on the work of seven teachers who were selected based on several criteria which indicated that they were successful in promoting deeper learning in their classes. These teachers were highly recommended by students and fellow faculty, were observed to have at least 75% of the students engaged and actively participating in classes, and had classes that challenged students to use more complex thinking skills such as analysis, synthesis, or creating new ideas, as opposed to simple recall and application. Incidentally, all the teachers had a minimum teaching experience of 10 years, were

in their early forties, and were teaching in public schools. For this qualitative sub-study, they explored the question “What dispositions, skills, orientations, and identities do we want to cultivate in teachers if the goal is to inspire and motivate the next generation of students?” (Mehta & Fine, 2019, p. 311). In doing so, they gleaned several differences between the deeper learning teachers and their more traditional counterparts. Differences were seen in their goals and priorities, their views on knowledge, students, and failure, the kinds of learning relationships they enacted, and their general work ethos. These differences are summarized in Table 2.

Table 2

Different Approaches: Traditional Versus “Deeper” Teachers

	Traditional Teachers	“Deeper” Teachers
Educational goal	Cover the material	Do the work of the field; inspire students to become members of the field
Pedagogical priorities	Breadth	Depth
View of knowledge	Certain	Uncertain
View of students	Extrinsically motivated	Creative, curious, and capable
Role of student	Receiver of knowledge	Creator of knowledge
Role of teacher	Dispenser of knowledge	Facilitator of learning
View of Failure	Something to be avoided	Critical for learning
Ethos	Compliance	Rigor and joy

Note. From *In Search of Deeper Learning* (p. 351), by J. Mehta and S. Fine, 2019, Harvard University, copyright 2019 by J. Mehta and S. Fine. Reprinted with permission.

In summary, the literature of this second wave of studies presented a more sociological understanding of deeper learning, focusing on how this could be furthered in education as the necessary response to the changing demands and circumstances in school environments that have been prompted by increasing global competitiveness (Chow, 2010; Pellegrino & Hilton, 2012; Towler, 2014) or by the developing pedagogical opportunities and needs of the students that were ushered forth by technological advancements (Fullan & Langworthy, 2014). The articulation of deep learning in these studies was geared towards the development of inter-personal, and intra-personal competencies with significant real-world/ real-life applications.

The problem of inequity also began to emerge in the literature of this period. The American studies presented nuanced applications of the deep learning paradigm for students with disabilities and ESL learners (Gándara, 2015; Vaughn et al., 2015). The studies originating from Canada presented deep learning as a response to and an opportunity for battling inequity given the greater cost-effectiveness of deep learning programs that it espoused (compared to programs that relied on infusing the latest technologies with traditional pedagogy) and also as a strategy to combat inequity insofar as deeper learning, by nature countered the natural tendency to *dumb-down* lessons for students who were lower-performing (Fullan & Langworthy, 2014). One driver of the research for this period was the need to shape or re-shape public policy and to provide intelligent bases for the allocation of both government and private resources towards educational reforms (Fullan & Langworthy, 2014; Pellegrino & Hilton, 2012).

The Third Wave: Deep Learning Amidst the Complexity of Constant Change

The third body of literature reviewed here is comprised of two theoretical/philosophical expositions that frame deep learning against the backdrop of the evolving nature of human understanding. This wave of the literature (scarce but steadily growing) has involved the exploration of philosophical underpinnings of deep learning in the context of the evolving nature of reality, human understanding of truth, and the dis-orientation deep learning allows students to resolve, over and above acquiring 21st century skills. Commentators in this emerging field have highlighted the disorienting nature of the *post-truth* age, given the deep social polarization, the rampant proliferation and weaponization of fake news, and the predominance of social-media and the internet, which have become the main drivers of the way information is created, shared and processed.

Deeper Learning as Overriding Experience

Drawing from philosophy, anthropology, cognitive psychology, and life sciences, Ohlsson (2011) proposed a hypothetical model which suggested that deep learning is *non-monotonic* cognitive change which allows a learner to “override experience” in order to allow creativity, adaptation and conversion (p. 21). Ohlsson suggested that:

Prior experience is our only guide to the future. There is no other source of expectations. But in a world characterized by complexity and turbulence, change is the only constant. Furthermore, change is thoroughgoing, and the rules that control change are themselves changing. In this kind of world, prior experience is guaranteed to be misleading most of the time, although it might provide a good enough approximation in local contexts or over short periods of time. Learning in this kind of world requires cognitive capabilities other than those implied by...finding regularities therein and projecting those regularities onto the future. To successfully deal with thoroughgoing change, human beings need the ability to override the imperatives of experience and [to] consider actions other than those suggested by the projection of that experience onto the situation at hand. (Ohlsson, 2011, p. X)

Ohlsson’s (2011) hypothesis on deep learning did not deny that there are cognitive processes that effectively validate experience. Such learning (i.e., inductive learning) is clearly time and context-bound and produces knowledge that consistently fits with the paradigm or existing conceptual frameworks of the learner. Thus, the term “monotonic”, a term employed by logicians but which Ohlsson applied to his theory. However, he asserted that this kind of learning is only half of the picture, and the other (deeper) half of our understanding of learning should be focused on how learners “abandon, override, reject, retract or suppress knowledge that we had previously accepted as valid in order to track a constantly shifting and fundamentally unpredictable environment and thereby indirectly create mental space for alternative or even contradictory concepts, beliefs, ideas and strategies” (p. 22).

The exposition of this theory included an analysis of cognitive principles involved in creativity, adaptation, and conversion and how non-monotonic change was applied to these concepts. Table 3 summarizes how deep learning (monotonic change) creates alternative outcomes to routine, superficial-level processing of information.

Table 3

Distinctions Between Routine Processing, Monotonic Change, and Non-Monotonic Change

Routine processing	Monotonic Change	Non-monotonic Change
<i>Creativity:</i>		
Execute the current task strategy.	Follow an unexplored path in the current problem space.	Revise problem space by activating previously unheeded options.
<i>Adaptation:</i>		
Execute the current task strategy.	Extend strategy by adding rules for previously undecided situations.	Alter strategy by constraining (specializing) existing rules.
<i>Conversion:</i>		
Retrieve and articulate beliefs.	Form new beliefs that are consistent with prior beliefs.	Revise and propagate the truth values of existing beliefs.

Note. From *Deep Learning: How the Mind Overrides Experience* (p. 367) by S. Ohlsson, 2011, Cambridge University, copyright 2011 by Cambridge University. Reprinted with permission.

Under each of the cognitive processes of creativity, adaptivity, and conversion, monotonic and non-monotonic changes manifest in fundamentally different ways. In creativity, for example, monotonic change would include exploring various unexplored options within the same scheme or problem structure. Non-monotonic change, on the other hand, involves restructuring the problem space itself by activating variables previously unseen. The same dynamic is seen for adaptation and conversion, in which strategies and beliefs are respectively seen as the problem structures to work with.

The literature to date has not expounded on the implications of this proposed theory on deeper learning for the field of education.

DL and Overcoming Disorientation

Finally, Wergin (2019) characterized deep learning as “learning that lasts” and which results from “cognitive and emotional disorientation that makes us want to examine other ways of viewing the world (p. viii). Wergin went further to propose that deep learning must be seen also as a philosophy, an orientation, or a mindset. Under this mindset, conceptions of truth are but temporary understandings that must be subject to constant review and scrutiny. Deep learners are those who engage fully with experience despite knowing that this may lead to temporary disorientation.

In expounding on deep learning as a mindset, Wergin (2019) presented pathways to deep learning, as well as highlighting various forms of learning that, when allowed to interact and reinforce each other, constitute deep learning. Wergin did so by borrowing from various contemporary theories and ideas from the fields of education, philosophy, cognitive psychology, spirituality, and management. The pathways to deep learning included (a) the creative tension that comes from a constructive outlook on disorientation; (b) mindfulness; (c) a dis-orienting value-based dilemma or complex problem; (d) aesthetic experiences from the arts; and (e) valuing settings that lend to deep work (Newport, 2016, as cited in Wergin, 2019); and the flow state (Csíkszentmihályi, 1975, as cited in Wergin, 2019).

Wergin (2019) coined the term constructive disorientation and defined this as “a feeling of arousal brought about by a perceived disconnect between the current [state] and a desired state, accompanied by a sense of efficacy that one is capable of dealing with that disconnect.” He related this to John Dewey’s assertion that curiosity and disquietude together are what make for

successful learning. (Dewey, 1938, as cited in Wergin 2019). Properly directed, constructive disorientation leads to deep learning.

In discussing mindfulness, Wergin (2019) employed the idea of “mindful learning” which is characterized by “the continuous creation of new categories; openness to new information; and an implicit awareness of more than one perspective” (Langer, 2016, as cited in Wergin, 2019, p. 53). Wergin further expounded on mindfulness using Buddhist East Asian thought, describing it as “a state of heightened alertness, one that is conscious of body sensations, accepting these without judgment, and focused more on the present moment.” Applied to deep learning, this mindfulness, according to Wergin, is what allowed the learner to challenge “knee-jerk reactions to stimuli that might lead to the assortment of cognitive biases that stand in the way of deep learning” (p. 53).

Wergin (2019) identified highly complex problems—not those with a mathematical solution, right or wrong answers, or simplistic win-win alternatives—but those where the only way forward was a re-prioritizing of values of those involved, as those that require deep learning skills to address them effectively. These dilemmas were often encountered in social spheres where competing values of different people or groups of people overlap. Thus empathy and collaborating with others are crucial deep learning skills that must unite on this pathway. Wergin also cited what psychologists have recognized as the “flow state” and what management and work-life specialists are now calling “deep work”. The flow state, or simply “the flow”, is “a state of optimal experience arising from intense involvement in an activity that is enjoyable, such as playing a sport, performing a musical passage, or writing a creative piece.” (Csíkszentmihályi, 1975, as cited in Wergin, 2019). Deep work was defined as “professional activities performed in

a state of distraction-free concentration that push your cognitive capabilities to their limit. These efforts create new value, improve your skill, and are hard to replicate” (Newport, 2016, as cited in Wergin, 2019, p. 69). Wergin asserted that “settings conducive to deep work cultivate the kind of deep concentration that produces flow—stretching just beyond one’s comfort zone and losing oneself in an activity—and, therefore, conditions that lead to deep learning” (p. 69).

Lastly, Wergin (2019) privileged the role aesthetic experiences provided by the arts play in deep learning, specifically as a unique pathway towards constructive disorientation and eventually conversion:

Artists make raising consciousness easier by inviting people to give license to their creative imagination, at low personal risk. . . . We humans are hard-wired to be intensely curious about and to have control over our internal and external worlds. . . . By inviting others into a different cognitive and emotional space, artists create an atmosphere of encouragement, often subliminally. “Here,” they say, “experience this with me”—and whether the experience is through encounter or expression, those invited have autonomous choices. Because artistic experience invites a vision of how things could be different—the essence of conscientization (Freire, 1970)—one is empowered to imagine how things could be different and thus experience efficacy. Finally, the empathic field created through artistic expression surmounts cultural boundaries and promotes belonging, connection, and community. (p138)

According to Wergin (2019) the various forms of learning that together constitute deep learning were : (a) analytical learning (e.g., critical reflection, applied problem solving); (b) instrumental learning (which leads to the development of expertise); (c) intuitive learning (which happens underneath the level of consciousness, also called tacit learning); (d) transformative learning (involving paradigm shifts and the adoption of new knowledge perspectives); and (d) assimilated learning (mindful integration of conscious and tacit learning.)

Wergin (2019) asserted that an important qualification is that often one kind of learning alone does not necessarily make for deep learning, but often it is in the interaction and

complementarity of learnings and dispositions that deep learning occurs. For example, he cited how critical/analytical thinking alone (i.e., a rational assessment using accepted logic on given information) did not guarantee deep thinking and deep learning, and, in fact, when misguided, could prevent it:

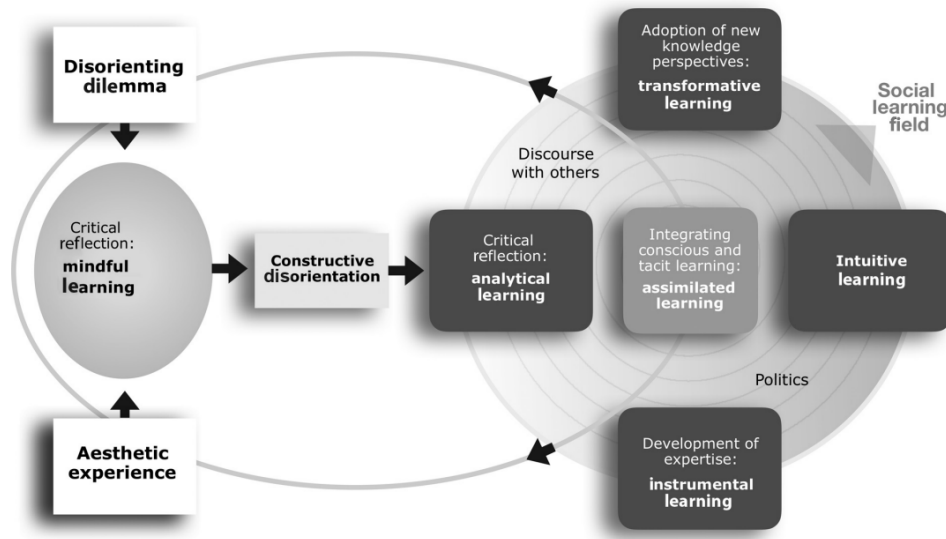
A convergence of research has demonstrated that analytic thinking, while good for analyzing arguments, is of little help with what the authors have called “bull****t receptivity” when the BS serves to strengthen one’s own existing belief, and may in fact simply make us better at arguing our case and dismissing others’ points of view. (Mercier & Sperber, 2017, n. p., as cited in Wergin, 2019, p. 2)

Understanding deep learning then, for Wergin (2019), was about exploring the question of what needs to accompany these various kinds of thinking in order to produce deep learning. The relationships of the pathways to deep learning and the various kinds of learning that constitute it, explained earlier, are presented in Figure 4.

Wergin (2019) explicitly stated that the impetus for seeking to further this understanding of deep learning and the exigency of promoting it were responses to concerning sociological trends. Among these were deeply divisive and polarized politics, the prevalence of fake news and disinformation campaigns, and the unhealthy and crippling impasse marking social discourse due to the inability to see beyond biases and to understand other worldviews. “Deep learners assume there is always more to learn . . . What is needed, I submit, is a commitment to deep learning, a way of being that treats incoming information thoughtfully and critically” (Wergin, 2019, p. vii).

Figure 4

Wergin's (2019) Deep Learning Mindset



Note. From *Deep Learning in a Disorienting World* (p. 138), by J. Wergin, 2019, Cambridge University, copyright 2019 by Cambridge University Press. Reprinted with permission.

In summary, these theoretical explorations of deep learning highlighted the transformative nature of deep learning. Deep learning has been defined by Ohlsson (2011) as non-monotonic cognitive change which allows a learner to override experience and further expounded by Wergin (2019) as what results from a cognitive and emotional disorientation that allows learners to examine other ways of viewing the world. Deep learning is not one kind of learning but is the result of the interaction and mutual support of various kinds of learning.

Neuroscience and Deep Learning

Developments in neuroscience, particularly those that further the theories on brain *plasticity* and the function of neural networks in the learning process, complement these various conceptual frameworks for deep learning. Brain plasticity or neuro plasticity refers to the brain's extraordinary adaptive capacity in response to stimuli from across all activities of human life

(Lövdén et al., 2010). Neural networks are structures of interconnected neurons (cells in the brain and nervous system) which serve as pathways through which we process sensory stimulation, perception, memory, and all forms of cognitive activity. As early as 1890, Spanish neuroanatomist Santiago Ramon y Cajal began to publish and lecture on his pioneering research in this field. While it remains unclear when the term *plasticity* was first applied to the study of the brain, to Cajal's work was attributed (a) the foundational understanding of the neuron as the most basic anatomical and metabolic unit of the nervous system and (b) that cognitive functioning was augmented by increasing the number of connections within the neural network (Mateos-Aparicio & Rodríguez-Moreno, 2019). In this section I briefly discuss how these concepts of neuroplasticity and neural networks relate to deep learning.

Developmentally, neural networks have been found to be formed, expanded, and strengthened by learning processes all throughout life (Royal Society [Great Britain], 2011). At birth, the brain of an infant already consists of billions of neurons, most of which have no pre-existing connections. External stimuli and cognitive processing trigger these neurons to transmit electrochemical signals to other neurons and to receive such signals from other neurons, creating pathways of intercommunicating neural networks.

“Stimulated neurons automatically send and receive messages to and from all the surrounding or related neurons. As new neurons become linked up, neural pathways are created, existing pathways are strengthened, and more sophisticated webs or neural networks are formed. . . . As we act upon the world, the world in turn acts upon us in the form of new neural pathways and neural networks. In this way, learning actually changes the physical structure of the brain as new neural networks are formed” (Johnson, 2019, pp. 10-11).

These changes to the brain happen daily and throughout life. Some changes, however, pertaining to the development of particular brain functions are more pronounced during early childhood (ages 1-6) and adolescence, when dramatic physiological development spurs increased brain activity and neural pathway development (Fullan et al., 2018; Johnson, 2019). Changes can be both progressive and regressive, whereby neural networks that are no longer often used can be subject to disintegration (thus there are certain cognitive skills, like mathematical computation or artistic abilities, that weaken or that we become less proficient in without practice (Carr, 2020).

While most of the literature on neural networks and plasticity does not make explicit mention of implications on deep learning, several observations and conjectures that educational psychologists have made about learning in general can be directly applied to deep learning. Below is a summary of these conjectures provided by Johnson (2019) and how they related to this dissertation.

- All learning—whether prompted by new external stimuli or by processing previously acquired information—is a matter of creating and strengthening neural pathways. The more extensive the neural pathway or pathways that are engaged in moments of learning, the deeper the learning.
- New experiences and new learning create new and more expansive neural networks. These, in turn, create greater receptivity and preparedness for future learning. Learning therefore begets learning. Similarly, deeper learning begets deeper learning because the depth by which previous information is taken and processed lends to a greater capacity to receive and process complex information more deeply in the future.

- Levels of attentiveness, use of repetition, and linking of new data or stimuli with previously acquired information (i.e., meaning-making) are all variables that affect the expansiveness of the neural pathways engaged and likewise affect the depth of learning.
- Each person's neural networks are unique. This means that each learner has a distinctive way of receiving, interpreting, and understanding reality. Thus, we all have slightly different ways that we have constructed reality in our cognitive systems, and there is no such thing as a purely objective view of reality held by a single individual. Deep learning, however, insofar as it fosters the development of more expansive neural networks, also allows for more multi-faceted, nuanced understanding of complex realities.
- While we are naturally inclined to reject views that differ from our own opinions or current ways of thinking, it is only in accommodating and considering various ideas and perspectives that we can expand our neural networks and can continue to develop as learners and human beings.

Dimensions of Deeper Learning

Education reformers have generally agreed that there is no singularly effective approach to promoting deeper learning (Fullan et al., 2018; Mehta & Fine, 2019). Schools that have been effective with deep learning have employed various approaches, combining different classroom and school administration practices deemed appropriate for local contexts and for student needs and backgrounds. These approaches are also dependent on the way cognitive processes, affective dimensions, and dispositions related to deep learning are understood and valued under the

general ethos or guiding philosophy of schools. This section summarizes what the empirical studies on deeper learning to date have revealed as regards these aspects of deeper learning, the educational competencies that deeper learning can build (i.e., the goals of deeper learning schools), and the elements of deeper learning design. The structure and contents of this section guided the data gathering process for this study.

Cognitive Processes Engaged in Deeper Learning

Meaning Making

When dealing with texts or material to be studied, deeper learners engage material on the level of meaning, that is, with greater focus on comprehending that which is signified (Marton & Säljö, 1976). Superficial learning, on the other hand, is associated with memorization and with a limited focus on the signs. In this way, deep learning is *meaningful* learning, coherent and holistic, and it lends to systematic and systemic explanation, not simply to the retention of disjointed pieces of information. Mehta and Fine (2019) referred to this as the ability to relate and organize information into larger schemas of understanding and give this example:

a shallow understanding of the biological cell might enable one to label its parts; a deep understanding would enable one to understand how a cell's components function together as a system and, thus, to anticipate what might happen if a particular component was damaged. (Mehta & Fine, 2019, p. 12)

Higher Order Skills of Bloom's Taxonomy

Deeper learning goes beyond being able to remember, understand, or apply information, but more importantly, it involves analyzing, evaluating, synthesizing and creating information (Mehta & Fine, 2019). These processes are categorized by education psychologists as the *higher-order skills* under the revised version of Bloom's taxonomy of cognitive processes (Anderson et.

al, 2001, as cited in Krathwohl, 2002). Briefly, these cognitive processes are defined by Krathwohl (2002, p. 215) as follows:

1. *Remembering* – retrieving relevant knowledge from long-term memory; (subsumes recognizing and recalling);
2. *Understanding* – determining the meaning of instructional messages, including oral, written, and graphic communication; (subsumes interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining);
3. *Applying* – carrying out or using a procedure in a given situation; (subsumes executing and implementing);
4. *Analyzing* – breaking material into its constituent parts and detecting how the parts relate to one another and to an overall structure or purpose; (subsumes differentiating, organizing, and attributing);
5. *Evaluating* – making judgments based on criteria and standards; (subsumes checking, critiquing);
6. *Creating* – putting elements together to form a novel, coherent whole or make an original product; (subsumes generating, planning, producing).

Graphically, this revised taxonomy is presented in Figure 5. The pyramidal representation of this taxonomy, with remembering and understanding at the base of the pyramid, is consistent with the assertion that deeper learning, although involving the higher order skills, also requires the lower order skills as foundational to the deeper work of analyzing, evaluating, and creating.

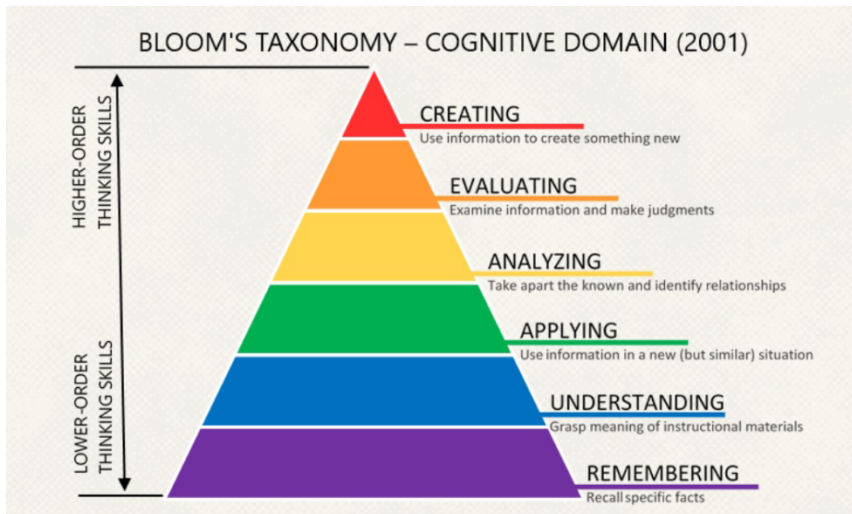
As Mehta and Fine (2019) explained,

a significant repository of factual knowledge and the ability to use that factual knowledge to develop interpretations, arguments, and conclusions. While “deeper learning” is

sometimes critiqued in the popular press as the latest round of favoring “skills” over “content” or “concepts” over “facts,” research clearly demonstrates that people who possess deep understanding of a domain move with ease across this false divide. The ability to offer a historical interpretation of the causes or consequences of the French revolution, for example, is rooted both in a detailed knowledge of the key players, structures, and events and in the ability to draw inferences, construct historical arguments, and use evidence to support one’s point. (p. 13)

Figure 5

Bloom’s Taxonomy of the Cognitive Domain



Note: A revised version of Bloom’s Taxonomy of the cognitive domain of educational objectives was published in *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom’s Taxonomy of Educational Objectives* (Complete edition), by L. W. Anderson et al., 2001, Longman, as cited in “A Revision of Bloom’s Taxonomy: An Overview”, by D. Krathwohl, 2002, *Theory Into Practice*, 41(4), 212–218. (https://doi.org/10.1207/s15430421tip4104_2). This illustration of the revised taxonomy is from the University of Florida—Center for Instructional Technology and Training (UF-CITT) website, accessed February 4, 2023. (<https://citt.ufl.edu/resources/the-learning-process/designing-the-learning-experience/blooms-taxonomy/>), copyright 2010 by UF-CITT. Reprinted with permission.

Meta cognition/ Meta Learning

Meta-cognition, the awareness of effective learning processes and techniques that one effectively employs in studying, is critical (Fräsineanu, 2013) and is considered by some as the most important factor in deeper learning (Biggs, 1987; Costa & Kallick, 2015; Watkins & Regmi, 1996;). This involves students being able to reflect and assess their own process of learning in relation to goals, standards, and methods employed and to be mindful of the most

efficacious means that works for them (Frășineanu, 2013). Meta-cognition or meta-learning involves *learning how to learn* effectively.

Reflection

There are several modes of reflection in educational settings, and metacognition or meta-learning is one of them. Another cognitive process that lends to deeper learning, however, is reflective thought that identifies connections between learned theory and experienced realities or practice and/or abstracting from one's personal experiences towards inducing theory. This involves a combination of self-examination and abstraction. Mehta and Fine (2019), Fullan and Langworthy (2014), and Roosegaarde (n.d., as cited in Fullan et al., 2018) make both direct and indirect references to this mode of thought by asserting that deeper learning happens when lessons are perceived and appreciated by students to be personally meaningful, beneficial, or enriching for their life and context. All of these states can be achieved only through the process of reflection.

Affective Dimensions related to Deeper Learning

Traditionally, education researchers associated learning mainly with cognitive processes. Progressively, however, as with the deeper learning paradigm, educators are affirming the importance of integrating the cognitive and affective dimensions of learning. Students learn with their “heads, hands and heart” (Mehta & Fine, 2019, p. 305) and “learn best in an environment that acknowledges the interconnectivity of both cognitive and emotional development” (Fullan, 2017, p. 23).

Passion

Deep learners are passionate about what they do (Costa & Kallick, 2015). Passion, when demonstrated by teachers through their love for their subject matter and their dedication to effective pedagogy, is infectious and promotes deeper learning for students (Mehta & Fine, 2019; Fullan et al., 2018). Love for particular fields of study, for reading, and for learning is inspired and enhanced among students when teachers are able to model this. Achievement, in turn, increases when students are motivated by the pursuit of *interest* and the desire to build competency, as opposed to being motivated merely by competition, ego-enhancement, or good grades (Biggs, 1987).

Belonging

The sense of belonging in schools is directly linked to the well-being of students and impacts the resiliency of students. This allows them to make positive choices that support deep learning (Fullan, 2017). Schools are likened to “a massive, invisible classroom where teachers, students and others are passing constant messages that impact well-being—many of them non-verbal—about belonging and connectedness” (Fullan, 2017, p. 22). The sense of community, of there being somewhere students can go, be, or discover themselves, to make productive or recreational but positive use of their time outside of classes, is a factor that makes organized extra-curricular activities an effective venue for deep learning (Mehta & Fine, 2019).

Consolation and Encouragement

Neuroscientists have found that the brain development of infants is affected by socio-emotional factors. For example, when a crying baby is picked up and comforted, neural pathways are stimulated and deepened, thus affecting a child’s potential for deep learning in the

future (Fullan et al., 2018; Mehta & Fine, 2019). Likewise, when the organizational culture of a school is positive, supportive, and encouraging and fosters empathy for both the teachers and students, the socio-emotional context becomes empowering for deeper learning (Fullan & Langworthy, 2014).

Fascination

Among the pathways to deeper learning that educators prize are curiosity (Roosegaard, n.d., as cited in Fullan et al., 2018;), wonderment, awe, and astonishment (Costa & Kallick, 2015). Deeper learners seek out learning experiences that allow them to experience or practice these dispositions (Costa & Kallick, 2015). Researchers have also found deeper learners to have high fascination quotients in their field of interest. For example, according to a recent quantitative study on European high school STEM students, students who exemplified deeper learning reported higher manifestations of fascination for science, which was measured as a composite variable comprised of a) activities that manifested this fascination, b) positive affective reactions to the subject matter, and c) cognitive statements that saw the subject matter in a positive light (Otto et al., 2020).

Joy

Deeper learners delight in problem solving and find enjoyment in life-long learning (Costa & Kallick, 2015). Deeper teachers commonly are those who find joy, coupled with rigor, in their teaching and in continuously learning about their field of expertise (Mehta & Fine, 2019). High school students report an unparalleled satisfaction and sense of fulfillment when being able to grapple with profound existential questions which they felt strongly about but for which they had no language handles prior to their study of philosophy (Mehta & Fine, 2019). Joy

is also what students of historically marginalized communities experience when they find greater connectedness, belonging, stimulation, and improved achievement via systems that promote deeper learning (Fullan et al., 2018).

Critical Pathways to Deeper Learning

Deeper learning researchers have also focused on particular proactive thinking dispositions that serve as critical pathways to deeper learning. A learning disposition is a “state of readiness or tendency to act in a specified way” when confronted with opportunities to learn deeply (Costa & Kallick, 2015, p. 59). Dispositions, in general, are “acquired patterns of behavior that are under one’s control and will as opposed to being automatically activated” (Ritchart, 2002, as quoted in Costa & Kallick, 2015, p. 59) and are dependent on attitudes, intentions, preferences, and capabilities (Salomon, 1994, as cited in Costa & Kallick). Costa and Kallick (2105) asserted that there are at least 16 dispositions which are critical pathways to deeper learning. They are:

1. Persisting
2. Managing impulsivity
3. Listening with understanding and empathy
4. Thinking flexibly
5. Thinking about your thinking (metacognition)
6. Striving for accuracy and precision
7. Questioning and problem posing
8. Applying past knowledge to novel situations
9. Thinking and communicating with clarity and precision

10. Gathering data through all senses
11. Creating, imagining, and innovating
12. Responding with wonderment and awe
13. Taking responsible risks
14. Finding humor
15. Thinking interdependently
16. Remaining open to continuous learning.

Since dispositions are *acquired* patterns of behavior, deeper learning schools can view cultivating these dispositions as both a means toward and as having their end in deeper learning. Cultivating deeper learning dispositions is achieved by clearly articulating expectations as regards the development of these dispositions, developing and promoting a common vocabulary that embodies the orientation of the school's culture toward this end, applying these dispositions to multi-various contexts, operationalizing and modelling these dispositions as habits or actions, and by considering these dispositions in the goal setting of the school (Costa & Kallick, 2015).

Additionally, in the context of deep learning as the means to overcome dis-orientation creatively, Wergin (2019) argued that the creative tension that comes from a constructive outlook on disorientation, mindfulness, dis-orienting value-based dilemmas, or complex problems, aesthetic experiences from the arts and valuing settings that lend to *deep work* (Newport, 2016, as cited in Wergin, 2019) and the *flow state* (Csíkszentmihályi, 1975, as cited in Wergin, 2019) are all pathways that educators intent on promoting deeper learning should leverage.

Components of Deeper Learning

The core of deeper learning, for Mehta and Fine (2019), consists of “powerful learning experiences” (e.g., engaging discussion with teachers and classmates or a group project) that punctuate “arcs of learning” which stretch out through longer periods of time (e.g., a semester or a school year; p. 16). These powerful learning experiences emerge at the intersection of the three components of deep learning: mastery, identity, and creativity.

Mastery is tied to “substantive knowledge of content, transfer of this knowledge, pattern recognition and expertise, and understanding the structure of a field or discipline” (Mehta & Fine, 2019, p. 16). It is attained largely through the efforts of the student, consisting of dedicated work, focus, and self-investment through participating in the cycle of study, practice, correction, and starting over. For Mehta and Fine (2019), mastery pertains not merely to rote memorization, but more importantly to ingrained knowledge of the ways of proceeding, measuring, problem-posing, and solution finding particular to various academic fields of discipline. In developing an instrument to measure and correlate deeper learning with integrated knowledge and fascination for science, Otto et al. (2020) defined deeper learning to be a result of “a more thorough understanding of a subject that endures the test of time” (p. 807). For the purposes of this study, this definition is taken as complementing Mehta and Fine’s (2019) definition of *mastery*.

Identity relates to “intrinsic motivation, the way it is fueled by learners’ perceptions of the relevance of the content, and the way in which learning becomes deeper as it becomes a core part of the self” (Mehta & Fine, 2019, p. 16). Identity is built up in the context of a supportive and normative community that allows the student to take root in shared aspects of identity but

also to spread his or her wings, confident in his or her own individuality. The grasp of one's identity, according to Mehta and Fine, is attained through the process of self-reflection.

Creativity, on the other hand, involves “the shift from receiving the accumulated knowledge of a subject or domain to being able to act or make something within that field; taking this step builds on one's understanding of a domain” (Mehta & Fine, 2019, p. 16). Finding solution sets, theorizing, or experimenting with ingenious approaches, as well as artistic or literary creation, are expressions of this creativity which lend to deeper learning. These can only be achieved by *doing*, by practice, and by honing skills that are shaped and strengthened by the related disciplines (Mehta & Fine, 2019).

In summary, Mehta and Fine (2019) asserted that those interested in deeper learning need to focus on these three qualities for the following basic reasons:

Mastery because you cannot learn something deeply without building up considerable skill and knowledge in that domain; identity because it is hard to become deeply learned at anything without becoming identified with the domain; and creativity because moving from taking in someone else's ideas to developing your own is a big part of what makes learning “deep.” (p. 299)

Powerful learning emerges from the intersection of these three qualities. At the same time, these three qualities “act as a reinforcing spiral that accumulates over time to produce deep learning” (p.16). Through time, learning is further deepened when these powerful learning experiences are reinforced by various community settings or when learners continuously encounter powerful experiences with similar learning components but with progressively more sophisticated or complex applications.

Deeper Learning Tasks

In the setting of deeper learning schools, the essential components of powerful learning experiences are brought together by Deep Learning Tasks (Fullan & Langworthy, 2014, p. 22). Deep learning tasks present curricular content in ways that engage and challenge students more effectively through various means—e.g., by making use of digital tools and resources which give students *hands-on* opportunities to create and use knowledge that is new to them and that is relevant to realities outside the classroom and fostering the development of key skills that will empower students in their present and future contexts, while also giving teachers observable ways to assess and measure the growth of the students in terms of their acquiring these skills (Fullan & Langworthy, 2014). The nature of such a learning task ensures that the third dimension of the learning with the *head, heart, and hands*, or that *learning by doing* which is crucial to deep learning (Mehta & Fine, 2019), is fulfilled. Educators who have attested to the efficacy of deeper learning tasks have highlighted purpose (Pink, 2013, as cited in (Fullan & Langworthy, 2014), voice, and choice (Rosenstock, 2013, as cited in Fullan & Langworthy, 2014) as enablers of deep learning through these tasks. The sense of purpose in student learning is strengthened by tasks that give students an opportunity to think about and to address complex problems that affect their communities. Voice is affirmed when student feedback is an essential element to refining and enriching the task-learning process. Choice is empowered when students are allowed to exercise their own agency in determining their particular projects of focus under broader guidelines provided by the instructors (Fullan & Langworthy, 2014).

Among several cases that Fullan and Langworthy (2014) presented, these two exemplify the above characteristics of deeper learning tasks:

Rhonda Hergott, a seventh and eighth grade math and science teacher at Wellesley Public School outside of Toronto, Canada, described a deep learning task that exemplified this type of knowledge creation. The task was for students, working in teams, to design geodesic domes using a series of different math principles, and then to build the domes out of cardboard for a class of first-grade students in the school. Students ran all aspects of the task, from developing the questions they would address, to figuring out the design process, to contacting businesses for the cardboard they needed, and analysing the costs from different providers. During the course of their teamwork, the students decided they would need accurate data, so they measured all the first-grade students' heights and analysed their mean, median and mode so they could build domes of the right size. Throughout the task, weekly learning "checkups" assessed how well students understood a concept taught during a portion of each week (for example, how to calculate the circumference of a circle would be taught the week before they needed to apply it in the project). By the middle of the six-week task, the students were running their own assessments to test their understanding of the concepts. By the end of the task, Rhonda's students had covered more strands of the required curriculum than the other two classes of the same age in the school, who were learning through more traditional, textbook-based content. This project was Rhonda's first attempt to carry out a deep learning task in the new pedagogies style. When we asked her about the task's impact, she told us: "What that did for me was open up a whole new insight into how students are learning. The students were completely engaged, didn't want to leave math to go to gym or go outside. They wanted to stay and do math, even during lunch period. It wasn't just about building the domes, but about their ownership. They owned it. They owned and guided the process." (Fullan & Langworthy, 2014, p. 23)

Another case was that of a follow-through project for 10th grade students who were asked to consider environmental problems and to write about them. These students

could choose any aspect of the environment they wanted but had to demonstrate writing and communication skills (aligned with Common Core curriculum standards in the United States) alongside knowledge about the environmental issue they chose. After the papers were completed, students were asked to do something about the issue they had chosen, applying their knowledge to a real situation. One group of boys not known for their love for literature class had written about water pollution. These boys negotiated amongst themselves and chose to address Dog River, which was near the school and had become polluted. They developed ideas for a solution and a plan of action. Then they secured a donation of \$3,400 worth of advertising from the local newspaper to build awareness of the issue. They got a local coffee shop to make a special coffee blend to raise funds. And two weeks after school was out—note that this is after "grades" were completed—the kids were out with a local TV station at the river cleaning up the water and describing to viewers what the community needed to do to keep Dog River in the future. This example shows us how deep learning tasks require students to make the leap between creating new knowledge and doing something with it outside of school. Through

such leaps, students develop more “proactive dispositions” towards learning and doing (Fullan & Langworthy, 2014, p. 24).

For these deeper learning tasks to be effective, Fullan and Langworthy (2014) concluded that they will need:

1. to [be] guided by clear and appropriately challenging learning goals, goals that ideally incorporate both curricular content and students’ interests or aspirations,
2. to include specific and precise success criteria that help both teacher and student know how well goals are being achieved, and
3. to incorporate feedback and formative evaluation cycles into the learning and doing processes, building students’ self-confidence and “proactive dispositions” (p. 22).

Noteworthy here is how Fullan and Langworthy’s (2014) paradigm for deeper learning tasks dovetailed with Mehta and Fine’s (2019) concept of powerful learning experiences. In the cases presented by Fullan and Langworthy (2019) and in their articulation of the goals and parameters for effective deeper learning tasks, the mastery and creativity privileged by Mehta and Fine (2019) appeared central to the conception of deeper learning tasks. However, the third crucial element of *identity* was missing from the paradigm of Fullan and Langworthy (2014) and was given significant focus in this case study.

Competencies Built up by Deeper Learning (Goals of Deeper Learning)

The studies included in this review of literature employed similar but significantly varying lists of competencies that deeper learning can develop. The difference naturally accounts for the varying contexts, needs, and values that surround and govern the educational goals of the schools in which the studies were conducted. For the purposes of this review of literature, six competencies were considered. The first four of these competencies (i.e., critical thinking, communication, collaboration, and creativity) are shared by both the American and Canadian

paradigms. The last two (i.e., character and citizenship) are unique to the Canadian paradigm and were significant to this case study.

Critical Thinking

Critical thinking involves the ability to assess emergent, multi-factorial problems (King & Kitchener, 1994), to design and manage complex projects and to make effective decisions (Fullan & Langworthy, 2014), to evaluate the truthfulness of information through reflective judgment (King & Kitchener, 1994), to manage complexity, and to practice analytical skills with inductive and deductive thinking with precision and accuracy (Vockley, 2007). Students who acquire these skills are also able to engage learning through approaches that are more integrated and inter-disciplinary (Fullan & Langworthy, 2014) and are cautious of narrow epistemologies that fail to emphasize the need to review emerging data constantly in determining the truthfulness of propositions or the appropriateness of solutions.

Communication

Competence in communications involves writing and speaking skills (both for interpersonal engagement and in public speaking settings), as well as mastery of a variety of digital media (Fullan & Langworthy, 2014). Even more specifically, this field of competence includes professional and technical writing, information development, rhetoric and persuasion, and building credibility and charisma (Vockley, 2007).

Collaboration

Competence in collaboration involves being comfortable working in teams, learning from and contributing to others, having effective social networking skills, and being able to practice empathy (Fullan & Langworthy, 2014) and deep listening (Trimboli, 2017). Flexibility in

working within small group dynamics and managing outcomes and interpersonal relationships also fall under collaboration (Pellegrino & Hilton, 2012).

Creativity

Creativity involves thinking that is inventive, innovative, intuitive, and able to awaken curiosity within oneself and others (Vockley, 2007). It is applied to economic and social entrepreneurialism, considering and pursuing novel ideas, and leadership for action (Fullan & Langworthy, 2014). Problem solving skills are also seen to be at the intersection of critical thinking and creativity (Fullan & Langworthy, 2014; Vockley, 2007). Creative thinking applies to the arts (i.e., with artistic or literary creation) and to the sciences, as well, in finding solution sets, theorizing, or experimenting with ingenious approaches to problem solving. In 2015, creativity was only ranked number 10 in the World Economic Forum's listing of critical 21st-century competencies based on industry surveys. Some years later, it rose to the third rank, indicating how it is growing in importance in the workplace (Fullan & Langworthy, 2018).

Character

Although character is not usually considered a competency, in discussions of goals for deeper learning schools, developing character involves inculcating responsibility, honesty, self-regulation and responsibility, industriousness, resilience, desire for the common good, other-centeredness, confidence, and well-being (Fullan & Langworthy, 2018). While the original American paradigm (Pellegrino & Hilton, 2012) did not include character, later formulations of 21st-century skills would include aspects of character such as ethics and initiative (Costa & Kallick, 2015).

Citizenship

Citizenship, sometimes also referred to as *global citizenship*, involves respect for and ability to engage other cultures, forming students to be conversant in social, global, and environmental issues (on justice, human development, and sustainability) and to be proactively involved in helping to address these through engaging one's own local community (Fullan & Langworthy, 2014). Strengthening a sense of financial and civic responsibility also falls under this competency.

Fullan et al. (2018) considered these six competencies as encompassing the various skills needed in present and future work-settings, as identified by education reform leaders such as the World Economic Forum, the Apollo Institute, and various countries that have joined the global movement for deeper learning. In Table 4 are three examples of lists enumerating such skills.

Table 4

Various Articulations of 21st-Century Skills

World Economic Forum (2020) ^a	Apollo Institute (2020) ^a	Singapore Ministry of Education (2021) ^b
1. Complex Problem Solving	1. Sense making	1. Civic Literacy, Global Awareness and Cross-cultural Skills
2. Critical Thinking	2. Social Intelligence	2. Critical and Inventive Thinking
3. Creativity	3. Novel and Adaptive Thinking	3. Communication, Collaboration and Information skills
4. People Management	4. Cross Cultural Competency	
5. Coordinating with others	5. Computational Thinking	
6. Emotional Intelligence	6. New Media Literacy	
7. Judgment and Decision making	7. Transdisciplinary	
8. Service orientation	8. Design mindset	
9. Negotiation	9. Cognitive Load Management	
10. Cognitive flexibility	10. Virtual Collaboration	

Note. Collated from various sources.

^a From *The 10 Skills You Need to Thrive in the Fourth Industrial Revolution* by A. Grey, 2016, World Economic Forum, as cited in *Deep Learning: Engage the World Change the World* (p. 42), by M. Fullan et al., 2018, Corwin, copyright 2018 by New Pedagogies for Deep Learning.

^b From *21st Century Competencies* by the Singapore Ministry of Education, n.d., Singapore Ministry of Education, <https://www.moe.gov.sg/education-in-sg/21st-century-competencies> accessed December 15, 2022, copyright 2022 by Singapore Ministry of Education.

Regardless of the variations between competencies that schools have chosen to include among their educational goals, what has been common across the deeper learning schools is how their chosen competencies play an integral role in determining curricular content, the structuring of pedagogies, learning tasks, and powerful learning experiences for their students.

Elements of Deeper Learning Design in Schools

Approaches to imparting the desired deeper learning competencies can be classified under the four categories: (a) Learning Partnerships; (b) Learning Environments; (c) Leveraging Digital; and (d) Pedagogical practices (Fullan et al., 2018, p. 59). These are the elements of deeper learning design that ensure the formation of life-long learners with the desired 21st-century competencies (see Figure 2 for the conceptual framework). While these four elements, in practice, are “integrated and mutually enforcing”, they are distinguished under Fullan’s paradigm, “to accentuate the need to consider each in its own right, build precision in the interrelationships, and increase intentionality in learning designs” (Fullan et al., 2018, p. 59).

Activating Partnerships for Deeper Learning

The new partnerships that are emerging from deeper learning contexts are defined in terms of evolving roles and relationships and are framed by the expanded view of the student as the primary agent of the learning process.

New Student Roles. In place of traditional views which place students as subordinate to teachers and as mere recipients in the learning process, deeper learning paradigms emphasize students as leaders of their own learning, co-constructors of knowledge, and equals in the partnerships that impact the formative power of schools. To enable students to fulfill these roles, their socio-emotional needs (i.e., for belonging and connecting), aspirations (i.e., expectations,

interests and needs), and meta-learning capacities (i.e., feedback, agency, meta-cognition, reflection) must be supported (Fullan et al., 2018; Mehta & Fine, 2019).

New Teacher Roles. Critical roles that teachers must assume in the deeper learning frameworks are those of *activator* of key components of the learning process, culture builder of towards establishing enabling conditions in the classroom and the school, and collaborator in the mapping-out of learning journeys (Fullan et al., 2018). Activator teachers who do not assume the role of all-knowing guru (i.e., “*the sage on the stage*”) nor just that of facilitator (i.e., “*the guide on the side*”) are three times more effective as catalysts for student learning (Hattie, 2012, n. p., as cited in Fullan et al., 2018, p. 80). Activators are catalysts and coaches, employing various pedagogical strategies (e.g., metacognition, feedback, reciprocal teaching, scaffolded lines of questioning) that structure learning processes towards deepening the competencies of students, and they enable students to activate or enter the next levels of learning. They do so by engaging the students in a dynamic, interactive way to “define meaningful learning goals, establish success criteria, and develop student skills in learning to learn so that they become reflective, metacognitive learners” (Fullan et al., 2018, p. 67). As culture builders, they shape the environment of the classroom, through the practices, behavior, values, norms, beliefs, stories and myths, heroes and heroines upheld by the school community (Owens & Valesky, 2015). Educational psychologists have asserted that cultures which effectively enable student learning are those that promote belonging and belief (a) in the ability to succeed (Farrington et al., 2012; Tough, 2016); 2) in perseverance and in the fruitfulness and productivity of student effort, and 3) belief in in the significance of their academic work (Farrington et al., 2012); and that promote a sense of autonomy (Tough, 2016). As collaborators, these teachers help to frame student-led

learning to ensure that it is not only engaging but is also formative of the complex levels of competency growth (Stone, 2017, as cited by Fullan et al., 2018). They also practice transparency and seek out ways to cooperate with fellow teachers to build knowledge, collective reflection, and improved practice (Fullan et al., 2018).

New Leadership Roles. Leaders are orchestrators of the work towards the deeper learning of all the members of the school community. They model learning, shape culture, and maximize the focus on deep learning. In modelling learning, they work closely with teachers, immerse themselves in the learning of effective pedagogies side-by-side with the teachers, and intentionally build up leadership teachers to become leaders themselves. (Fullan et al., 2018). They influence culture by fostering trust and creativity, non-judgment, risk-taking, and learning from failures, and they establish structures that enable transparency, innovation, and continuous improvement in the review, planning, design, assessment, and re-design of learning in their schools. (Fullan et al., 2018). They maximize the impact of collaborative efforts by de-limiting the focus of change, clarifying success indicators, and helping to determine best practices (Fullan et al., 2018).

New Family Roles. In deeper learning schools, families are “the most powerful influence on children’s learning, development, health and well-being because they are the experts about their children and know them best, and are the primary context for their development” (Ontario Ministry of Education, 2014, as cited in Fullan et al., 2018, p. 71) and thus should be engaged continuously and in multi-various ways throughout the schooling of their children (Mac Iver et al., 2018). Adults in families play a critical role in helping students manage through times of

stress, a skill that impacts neural pathway development and impulse control, both of which are determinants of learning success (Tough, 2016).

New Community Roles. Due to the ease of communication technologies and the growing sense of a global community, networks of individuals and institutions beyond the confines of the school grounds or its immediate geographic vicinity have become an infinitely rich source of learning resource partners. The challenge for deep learning contexts is developing the teacher and student skills to engage in and nurture these partnerships and to discern those which are worthwhile (Fullan et al., 2018).

Environments for Deeper Learning

This aspect of deep learning design considers decisions that affect the physical, virtual, social, and cultural learning spaces of students. Studies have shown how certain aspects of the learning environment, in particular, organizational or school culture and the design of the physical and virtual spaces, are determinants of student achievement and learning (Fullan et al., 2018).

Cultures of learning. Studies on classroom cultures have suggested that the most effective learning environments are those where teachers and students value autonomy, competence, and relatedness (Ryan & Deci, 2017), which, additionally, are facilitated by cultivated mindfulness (Brown & Ryan, 2003, Donald et al., 2019, as cited in Ryan et al., 2021) and emotional integration whereby “emotions are neither suppressed nor cognitively altered, but rather openly and receptively attended to” (Ryan et al., 2021, p. 102). Concretely, teachers promote such cultures when they intentionally create safe spaces where every individual’s voice and contribution matters, where empathy and deep listening are modelled, and where learning

tasks are scaffolded to ensure self-efficacy as learners (Fullan et al., 2018). Crucial to the building up of autonomy and competence are the valuing of student voices and choices, as well as the timing according to which students are presented cognitively challenging tasks (Mehta & Fine, 2019; Tough, 2016). Fullan et al. (2018) summarized characteristics of “classrooms moving toward deeper learning” as places where students are encouraged and enabled to ask questions, where the process of inquiry is valued over answers, where various modes of learning are applied according to needs and interests, where the significance of real-world concerns is explicit, where collaboration is ensured, and where there is authentic, personal, transparent, and reflexive assessment of learning (p. 79).

Physical and Virtual Environments. Schools investing in deeper learning are putting space to innovative use either by purposeful design and engineering of newer facilities or simply by re-purposing traditional spaces. Either way, what ensures deeper learning is not just the kind of space that is available but, rather, the way spaces are used purposefully to support curious exploration and collaborative work. Deeper learning spaces are cognizant of student needs: “flexibility for large and small group collaboration; quiet places for reflection and cognition; active areas for investigation, inquiry, communication, and documentation; and rich resources that are transparently accessible” (Fullan et al., 2018, p. 80).

Leveraging Digital for Deeper Learning

Deeper learning design considers the maximized use of digital tools to facilitate, amplify and accelerate student-driven learning and to allow for creative innovations that open up learning opportunities beyond the scope of traditional approaches (Fullan et. al, 2018). This applies to both the classroom setting where digital is woven directly into the chosen pedagogies and to

school administrative settings where digital tools free-up teacher and administrator time that can be better spent at being activators of deeper learning processes for students and colleagues (Fullan & Langworthy, 2014). Crucial to integrating digital effectively into deeper learning design is the selectivity with which teachers will discern what digital tools to employ “to build knowledge, collaborate, or produce and share new learning” as well as allowing students to take the lead in identifying and selecting from the quickly evolving and expanding array of digital tools and determining how these enhance learning (Fullan et al., 2018, p. 82).

Pedagogies for Deeper Learning

Pedagogies for deeper learning do not consist of new methods of instruction per se, but rather are comprised of combined approaches that make use of evolving technologies, contexts, roles, and relationships in educational settings, as well as established pedagogical practices shown to be highly effective by education research (Fullan & Langworthy, 2014; Fullan et al., 2018) Figure 6 shows a listing of the multi-various proven pedagogical practices side-by-side with emerging innovative practices being used in combination towards deeper learning.

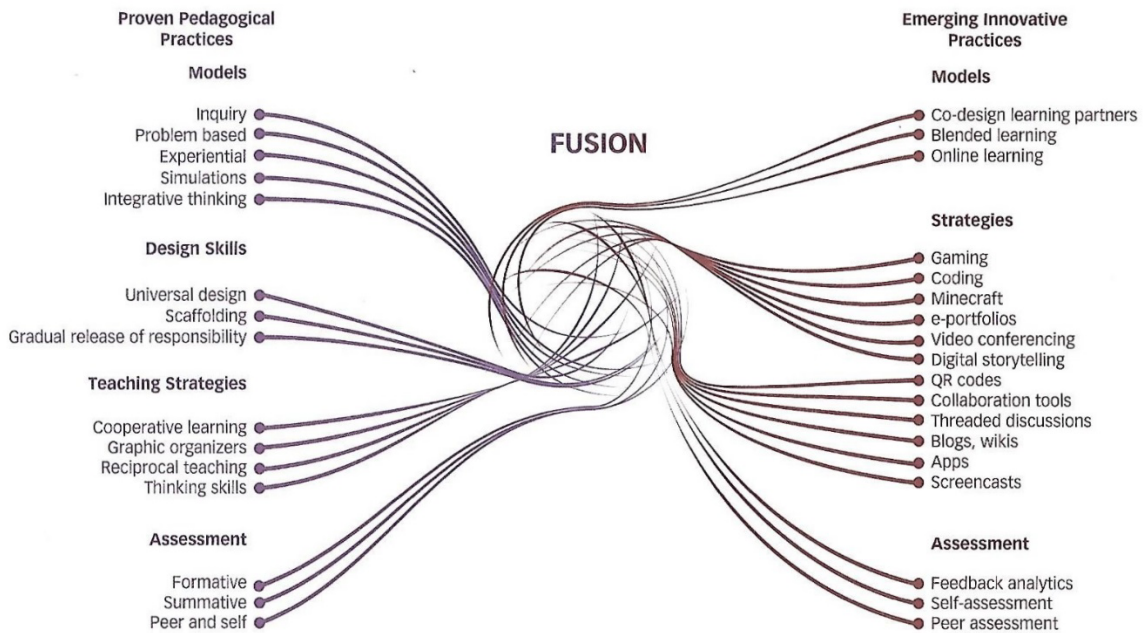
Fullan et al. (2018) believe that these combined approaches to deeper learning are in direct contrast to the traditional focus on content mastery, teacher-centered schooling, and the transmission of knowledge under the traditional paradigm of education. Mehta and Fine (2019), on the other hand, contend that deeper learning cannot do away with mastery, but rather, that it integrates mastery with identity and creativity towards deep learning objectives. Mehta and Fine (2019) further elaborated:

deep learning is not synonymous with student-centered learning, project-based learning, blended learning, or competency-based learning. These are modalities of learning that can be either deep or shallow in practice. We think of mastery, identity and creativity as rather stringent criteria against which particular learning experiences can be evaluated. In

advancing this argument, we are seeking to give some teeth to what it means to learn “deeply”, creating a demanding standard to which students, teachers and other stakeholders can aspire (p. 366).

Figure 6

Fusion of Proven Pedagogies with Emerging Innovative Practices



Note. From *Deeper Learning: Engage the World, Change the World* (p. 85), by M. Fullan et al., 2018, Corwin, copyright 2014 by New Pedagogies for Deep Learning. Reprinted with permission.

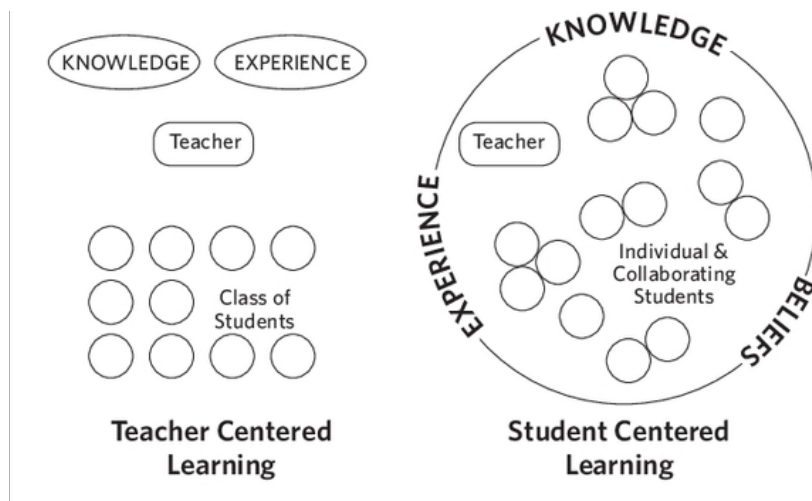
Noteworthy among the pedagogical approaches that foster deeper learning found in the case studies by Fullan et al. (2018) and Mehta and Fine (2019) are the following:

Student/Learner-Centered Learning. This constructivist approach to schooling, as opposed to a teacher-centered approach, centers the responsibility and agency on the learner in the learning process (Crumly et al., 2014; Klipfel & Cook, 2017). Figure 7 illustrates the differences between student-centered and teacher-centered learning and emphasizes how the source of knowledge and the crux of learning is not teacher expertise and previously established knowledge that is acquired by the teacher and transmitted to the students but, rather, is multi-

various. Students participate and can lead in the discovery or creation of knowledge within the expansive and inclusive circle of lived experiences and indigenous knowledge of the learner, fellow learners, the teacher, and established beliefs in particular fields (Fullan & Langworthy, 2014).

Figure 7

Diagram of Teacher-centered Versus Student-centered Learning Settings



Note. From “Student-Centered versus Teacher-Centered Learning”, by C. L. Crumly et al., 2014, *Pedagogies for Student-Centered Learning: Online and On-Ground*, Fortress Press, p. 5 (<https://doi.org/10.2307/j.ctt9m0skc.5>), copyright 2014 by Fortress Press. Reprinted with permission.

In traditional teacher-centered pedagogies, knowledge that is received by the teacher and is built up by his or her expertise is merely transmitted to the students through lectures, direct instruction, or guided inductive processes with pre-determined ends. In contrast, student-centered learning approaches facilitate active learning (i.e., allowing learners to engage in activities that promote analysis, synthesis, and evaluation of material), respecting and supporting each student’s learning pace, promoting collaborative learning among peers or between the teacher and the students, student demonstration (through projects and presentations), and discussions

(e.g., in small groups, debates, etc.)—all of which are means toward high student engagement (Crumly et al., 2014; Klipfel & Cook, 2017).

Based on empirical studies done in 78 high schools across the United States, one model suggested that student centered learning is further characterized by positive relationships, holistically addressing student needs, building positive identity, relevance to real-world problems, developing mastery and competency, and promoting learning beyond the classroom and outside of class hours (Kaput, 2018).

Problem-based Learning. In approaches that employ problem-based learning, students work collaboratively in groups to study complex problems without singular solutions. The process involves students identifying and discovering for themselves what they will need to learn before being able to study the problem-at-hand, applying their newly-gained knowledge to seek possible solutions, and, in the end, reflecting on their learning process. In such approaches, the teacher serves as facilitator and guide, as opposed to being an instructor. Studies have suggested that this approach promotes flexible thinking, effective problem-solving, self-directed learning, collaboration, intrinsic motivation, and lifelong-learning (Hmelo-Silver, 2004).

Project-based Learning. This approach is considered a form of student-centered learning, and is similar to problem-based learning, but requires the group of learners not only to propose solutions to the problem being studied, but also to produce an end product, a project in which will culminate their collaborative learning process. The effectiveness of this approach is evidenced by high student engagement due to the cognitive challenges posed by the creative objectives and their being balanced by affective, aesthetic, and ethical considerations in the project design process. Proponents also demonstrate that this approach supports self-reliance

(through the process of goal setting, planning, and organization), collaboration, and intrinsic motivation (Kokotsaki et al., 2016; Krajcik & Blumenfeld, 2005).

Competency-based learning. This pedagogical approach, originally associated with technical or vocational learning contexts, is now applied to pedagogy in almost all fields of educational practice. It views competency as inclusive of “abilities, skills, judgement, attitudes and values required for the successful functioning . . .” relative to a particular position or discipline (Gale & Pol, 1977, as cited in Scott, 1982, p. 119). As a pedagogical approach, it seeks to build student competencies in these terms, is outcome-oriented, and sees progress in learning by advancement to higher levels of performance or study, upon mastering prerequisite content and skills (Henri et al., 2017). Whereas other more traditional forms of pedagogy focused on content mastery, this learning approach highlighted “competency-based outcomes that are balanced between conceptual knowledge (theory) and skill acquisition (practice)” (Rivenbark & Jacobson, 2014).

Blended/Hybrid Learning. Blended or hybrid learning is the latest of these adaptive pedagogical approaches that combines effective face-to-face classroom pedagogies with the use of digital technologies, which allows students to fulfill learning tasks at their own pace and at their own available time (Hockly, 2018). Some definitions narrow the involvement of digital technology to online engagement, whether synchronous or asynchronous (Hrastinski, 2019), but more important than the nature of the digital engagement is that these blended approaches are purposefully scaffolded in order to support deeper learning by ensuring that active participation, collaborative social engagement, and reflection on real-life experience are woven into the blended learning design (Martín-García, 2020).

In the succeeding section of this chapter, I shall cite empirical studies done in Cambodia that examined the effectiveness, or lack thereof, of these pedagogies and the reasons put forward by researchers as regards the outcome of these applications. Importantly, both Mehta and Fine (2019) and Fullan et al. (2018) stress that learner-centered pedagogy alone does not automatically make for deeper learning, but rather that deeper learning requires complementary structures (e.g., a consistent school ethic, culture, and environment, leadership commitment, and arcs of learning) to be effective.

The Ethic of Deeper Learning Schools

Deeper learning schools have a guiding ethic or an ethos that permeates their whole system. This ethos or guiding spirit is made manifest in the classrooms, the school environment, the organizational culture, and in the values of the wider community that houses the school. These values are transmitted via the emerging pedagogies, fostered classroom and school cultures, cultivated relationships, and ways that the schools leverage technology towards inspiring the sought after depth in the learning and formation of the students. Mehta and Fine (2019, p. 380) called this ethos the “new grammar” of deeper learning because this underlying spirit structures the very language and thought of this kind of education. Fullan et. al, (2018, p. 59) called this spirit the “new pedagogies” of deeper learning. This deeper learning ethic has the following characteristics:

1. *Knowledge creation versus transmission*—Deeper learning schools focus more on the creation and use of new knowledge in the real world rather than transmitting knowledge that already exists (Fullan et. al, 2018; Mehta and Fine (2019);

2. *Premium for partnerships*—Deeper learning schools intentionally cultivate new learning partnerships between and among students and teachers as the learning process becomes the focal point for the mutual discovery, creation, and use of knowledge (Fullan et. al, 2018). These schools are “vertically integrated”, with teachers and students taking the roles of both teachers and co-learners, and with other field or community members being brought into the classrooms to provide expertise (Mehta and Fine, 2019).
3. *Expanded learning environments*—In deeper learning schools, the learning environment is practically boundless, extending far beyond the traditional classroom walls to use time, space, events, and people as catalysts for building new knowledge and creating an enabling culture for learning (Fullan et. al, 2018). Schools, community centers, and field sites, as well as virtual platforms, become the spaces where learning takes place (Mehta and Fine, 2019).
4. *Ubiquitous use of Digital Technologies*—deeper learning schools leverage digital technologies as much as it is available to accelerate and deepen learning. Digital technologies are neither add-ons nor simply ends in themselves but are creatively employed to help attain the educational goals. This can even sometimes include ways by which technological tools (e.g., for record keeping and administrative work) can free up more of the teacher’s time for ways to be more present to the student’s deep learning processes (Fullan, 2017, p. 60).
5. *Learning through doing*—Deeper learning schools integrate learning with the head, heart, and hands. They seek the well-rounded growth of students and apply

apprenticeship models that allow students to practice skills in order to gain competencies in the context of communities that provide guidance and standards for the particular fields or disciplines of study (Mehta and Fine, 2019).

6. *Depth over breadth*—In deeper learning schools, teachers forgo extensive coverage of lessons to maximize powerful learning experience that may present themselves as opportunities to deepen the student’s grasp of important topics. Such teachers appreciate how deeper often requires longer, sometimes variable, blocks of learning time, as opposed to fixed, short periods (Mehta & Fine, 2019).
7. *Learning leadership*—Students own and embrace their responsibility as the leaders of their own learning journeys in deeper learning schools. They proactively determine the paths, methods, subjects, and outcomes of learning endeavors (Fullan & Langworthy, 2014) and intelligently exercise voice and choice in significantly large areas of their schooling (Mehta & Fine, 2019).
8. *Learning at all levels*—Deeper learning schools become what organizational management practitioners call *learning organizations* (Owens & Valesky, 2015), whereby effective practice towards student learning is the subject of inquiry and concern not only by instructors, but by students, administrators, parents, and all members of the school community. As such, the learning process becomes one of “collaborative inquiry” (Fullan & Langworthy, 2018, p. 36).

A comparison of characteristics of Mehta and Fine’s (2019) new grammar of schooling and traditional ways of teaching and learning are further summarized in Table 5.

Table 5*Mehta and Fine's (2019) Reimagined Grammar of Schooling*

	Existing Grammar of Schooling	New Grammar of Schooling
Purpose	Assimilate preexisting content	Engage student as producer in variety of fields and worthy human pursuits
View of knowledge	Siloed and fixed	Constructed, interconnected, and dynamic
Learning modality	Teaching as transmission	Learning through doing; apprenticeship; whole game at junior level
Roles	One teacher, many students	Vertically integrated community: teachers, students as teachers, and field members providing expertise
Boundaries between disciplines	Strong	Permeable
Boundaries between school and world	Strong	Permeable
Places where students learn	Schools	Various, including schools, community centers, field sites, online
Choice	Limited	Open, multiple
Time	Short blocks of fixed length	Longer, variable blocks, time for immersive experiences
Space	Individual classrooms	Linked spaces, variable spaces
Assessment	Seat time, standardized	Creation of worthy products in the domain: projects, portfolios, performances, research
Organizational model	Linear, top-down planning	Distributed leadership; spirals of inquiry
Stance toward community	Defensive; keeping out	Welcoming; inviting in

Note. From *In Search of Deeper Learning* (p. 380), by J. Mehta and S. Fine, 2019, Harvard University, copyright 2019 by J. Mehta and S. Fine. Reprinted with permission.

Benefits of Deep Learning

A combination of empirical studies and theoretical conjectures can be found in the literature that have suggested the benefits of deep learning. Broadly, in the educational setting, these benefits were (a) higher student achievement (Frășineanu, 2013; Fullan et al., 2018; Fullan & Langworthy, 2014; J. Taylor, 2014); (b) better chances of graduating on time (J. Taylor,

2014); (c) increased propensity for integrated learning, student engagement, and student well-being (Frăsineanu, 2013; Fullan et al., 2018); (d) greater cost effectiveness for schooling (Fullan & Langworthy, 2014); (e) greater equity (Fullan & Langworthy, 2014); (f) encouragement of systems thinking and systems change (Fullan, 2020); (g) combats unhealthy cognitive biases (Farrell, 2016; Wergin, 2019); (h) enables critical consciousness necessary for anti-racism and social justice work (Wergin, 2019).

As regards student achievement, superior outcomes were reported by Zeiser et al. (2014) for students of Deeper Learning network schools upon comparing 13 pairs of matched member schools in California and New York. Students from such deeper network schools were also found by Taylor et al. (2014) to have generally scored higher on OECD PISA-Based tests and on the state ELA and mathematics tests, reported having healthier interpersonal and intrapersonal dynamics (possessing greater collaborative skills, motivation and self-efficacy), were more likely to graduate from high school on time, and averaged nine percentage points higher academically than did their peers in non-network schools.

Most recent among the related empirical studies, Otto et al.'s (2020) findings suggested that the integration of knowledge and a cultivated sense of fascination resulted from deep learning methods. Sixth graders from Greece, Finland, France, and Portugal (N = 1,261) were surveyed with two newly developed instruments, both resulting in satisfactory internal reliability and covering a broad range of integrated knowledge and fascination, in particular on the subject matter of science and technology. This was deemed significant insofar as integrated learning relates to higher student achievement and fascination, signs of higher and more sustained engagement.

According to Fullan et al. (2018), educational and developmental psychologists in their deeper learning networks have reported that core components of the deeper learning practices aligned with practices that ensure the psycho-emotional well-being of children. Fullan also has claimed that, in their seven member-countries, there has been a 50% decrease in the cost of average schooling expenses related to technological provisions per student, given the new deep learning pedagogies. There are also more opportunities to engage low-performing students because, under the deeper learning pedagogies, teachers are given several alternatives to “dumbing down” the lessons for these students. Structurally, schools have benefited from implementing deeper learning strategies because it allowed not only the students but the school leaders to move towards systems-thinking that fosters more impactful and meaningful systemic changes (Fullan, 2020; Fullan & Langworthy, 2014; Fullan et al., 2018;).

Lastly, deep listening and deep learning practices are being found effective by instructors teaching the difficult lessons that require overcoming cognitive biases. Teachers of courses on Fat studies (Farrell, 2016) and Critical Race Theory (Sangha & Bramesfeld, 2021) are reporting that they are successfully able to employ deep learning approaches in breaking through the cognitive barriers of conversion.

Situating Deep Learning in Cambodia

This section reviews the literature on Cambodian education reform and situates the quest for deeper learning in the Cambodian context with a brief country background, an overview of the historical development of education, and recent education reform initiatives that impact the quality of education, as well as the general conditions that intensify the need to promote deeper learning there. The historical and sociological conditions highlighted in this section have been

determinants in the shaping of the vision, mission, and praxis of the MMS and are thus significant factors to consider before narrowing our focus to the case study at hand.

Country Overview

The Kingdom of Cambodia is a Southeast Asian nation that shares its borders with Thailand and Laos in the north and Vietnam in the east. It covers roughly 181,035 square kilometers and has a population estimated at 17,304,363, as of 2021. At the time of this study, its population was remarkably young, with 47% of Cambodians being below 24 years old, and remarkably homogenous, with 95% identifying as ethnic Khmer and 97% of the population being Buddhist (Central Intelligence Agency, 2022).

The most cited aspect of Khmer heritage in the literature has been the ancient city of Angkor, which consists of vast temple complexes, artificial waterways and reservoirs, a road system, and walled inner-city, and which archeologists now recognize to be “the largest ritual and urban phenomenon the world would see for 700-800 years” (Fletcher et al., 2015). Angkor was the capital of Khmer civilizations from the 9th to the 15th centuries and was built within a 400-square-kilometer area located in what is now the province of Siem Reap. It has been estimated that, in its heyday, Angkor’s population was between 750,000 and 1M, and therefore was unlike any other city in the pre-industrialized world (National Geographic Staff, 2018). The area was declared a UNESCO Heritage site in 1992 and is testament to the wealth, power, and cultural and agricultural sophistication of the rulers of the Khmer Empire, which reigned over most of the expanse which now includes modern day Cambodia, Thailand, Vietnam, Myanmar, and Laos (UNESCO, 2004).

Central also to Khmer cultural heritage and national pride are classical court dances, religious traditions, celebrated holidays, and the Khmer language and script. In 2003, UNESCO included Khmer classical dance on the list of the Intangible Cultural Heritage of Humanity (UNESCO, 2008). Khmer classical dances are ritual dances originally performed over 1,000 years ago in the ancient Angkorian Royal courts as part of rituals that bridged the King to the Gods. These dances have been deeply interwoven into Cambodian national identity and are performed for festivals, weddings, celebrations, and also, albeit contentiously, for tourism purposes (Tuchman-Rosta, 2014). The religion practiced by the majority of Cambodians was derived from the Theravada branch of Buddhism and was heavily influenced by animism and Brahmanism, both of which were the prevailing spiritualities prior to Buddhism becoming the religion of the royal court during the reign of Jayavaraman VII (1181-1220; Harris, 2005). The Khmer New Year, celebrated for three days in mid-April at the end of the rice harvest season (Winter, 2004), and the *Pchum Ben* (Commemoration of Ancestors), celebrated for 15 days in early October (Holt, 2012), are the two most important national holidays (Baudinet, 2018). For these holidays, the majority of Cambodians living in the cities usually make their exodus to their home provinces in order to be with extended family members and to celebrate the festivities.

Cambodia's national language is Khmer (pronounced *Khmae*). The earliest written inscriptions of Khmer date back to 611 CE, from the same period that the earliest written English inscriptions come (Sidwell, 2010, as cited in Haiman, 2011). Khmer is the language with the most number of letters, with 74 in total (Guinness World Records, 2022). Widespread use of the language during the reign of the Angkor empire is evidenced by the remnants of hundreds of monuments across Southern Thailand and Vietnam and Cambodia which have inscriptions in the

ancient form of Khmer that date back to the 7th to the 15th century (Encyclopedia Britannica, 1998).

Most of the recent literature on Cambodia and Cambodian education has introduced the country by way of the most tragic part of its history, when the genocidal Khmer Rouge regime ruled the country from 1975-1979. The United Nations estimated that, over that period, more than 1.7 million Cambodians perished from famine, exhaustion in the forced labor camps, or from the systematic elimination of all Cambodians suspected of having had any association with Western influence (Widyono, 2008). While older generations of Cambodians still suffer from the memory of the horrors of that era, and while the school system continues to struggle with having to be rebuilt from the little to which was reduced during decades of unceasing hostility before, during, and after the Khmer Rouge regime, educators have observed a significant positive shift in terms of the cultural pride and general outlook of younger Cambodians and civil society groups working with them (Mudita Mission School, 2017). The portion of the population to which school-going children, university students, young teachers, and young professionals belonged made-up more than 65% of the population at the time of this study (Central Intelligence Agency, 2022) and was transforming this narrative of victimization and survivalism (furthered by much of the education research to date) to one of generating hope, strengthening personal agency, and exercising self-determination (Baudinet, 2018; KAPE Cambodia, 2021). This case study viewed the promise of deeper learning for this generation of Cambodians no longer through a deficit-approach, but through the more positive frames that this juncture in their history affords them.

Brief History of Educational Development in Cambodia

Various periods of Cambodian history and developments in education policy throughout the decades have shaped the challenges and opportunities to promoting deeper learning in Cambodia today. For this overview, I have included the practice of religious formation in Buddhist communities during the rule of the Chenla and Angkorian Empires (600 to the 1400s), the Colonial Period of the French Protectorate (1863-1941), the period under King Norodom Sihanouk (1953-1970), Civil War (1970-1975), the Khmer Rouge Period, the UNTAC, and the time of Hun Sen.

Temple Schooling

The earliest form of a systematic education in Cambodia was the religious education that boys and young men were afforded in the Buddhist temples. Historians have conjectured that this began as early as 500AD (Reimer, 2012, as cited in Brehm, 2021), but became widespread around the 12th century (Bit, 1991, as cited in Dy, 2004) when boys and young men were encouraged by their parents to take on monkhood or assist in the temple, usually for some years of their adolescent life. During this time, temple life included studies that mainly consisted of the rote memorization of sacred Pali texts, poems, and chants (Ayres, 2000; Brehm, 2021) and, presumably through these, the learning of Buddhist principles about individual life and society and some basic literacy and numeracy (Dy, 2004). This is the only manner of formal education evidenced by artifacts from the Chenla kingdom, as well as from the Angkorian era. Researchers have noted that this kind of schooling was done primarily for the purposes of the moral and religious formation of these boys and young men (Ogisu, 2014) and prepared them to participate in the political structures of Khmer society, thus helping to improve the status of their families,

since educated monks were considered above the peasantry and closer in rank to the King (Chandler, 2008). Based on the roles monks historically play in the lives of Buddhist Cambodians, I am of the opinion that this earliest form of education also had a social function. Since Buddhist monks in Cambodia perform priestly functions (e.g., performing blessings at weddings and funerals and overseeing the cremation of the remains of the deceased) it is reasonable to assert that the formation and education of the young monks in ancient times was also in preparation for them to serve the needs of the communities to which their temples belonged.

This exclusive educational system perpetuated by the temple-schools, however, had several negative consequences that may or may not have been intended. Ayres (2000) asserted that the temples, in effect, had a monopoly of knowledge, given that all written knowledge was stored in the temples and was taught only by the monks and that this monopoly of the educational system reinforced the monarchical hierarchy whereby the God-King ruled supreme, with the monks as the privileged mediating class, and the peasant super-majority (of over 90% of the population) at the bottom of the social pyramid. For some, this earliest system of education deified not only the Buddhist monks, but also the rote learning method they employed, as well. Education reformers have noted that these early choices of modes of learning have continued to impact the issues of inequity and reliance on rote learning (Brehm, 2021; Ayres, 2000).

Additionally, Ayres (2000) offered this analysis:

A definitive conclusion to be drawn from the instruction was its compatible relationship with the country's hierarchical social system. Traditional education reinforced the social hierarchy presided over by the king and legitimized by the country's Buddhist monastic order. Social regulation was not based on a discernible political ideology. Rather, it was based on a pragmatic acceptance of the necessity of regulation for survival. In essence, social regulation was the embodiment of the hierarchical political culture and was agreed

to in principle, and in conduct, by those it exploited. Traditional education broadly reflected and reinforced this pattern of social regulation. (p. 17)

Several theories have tried to explain the fall of the mighty Angkorian civilization and the abandonment of the city that housed its people. Some historians have asserted that unceasing conflict and incursions by neighboring Siam and Vietnam led to the civilization's demise (Chandler, 2008; Corfield, 2009). Evidence of climate change and severe droughts and destructive floods before the city of Angkor was abandoned have suggested that, since it became impossible to sustain a city of almost one million people residing in Angkor and its surrounding farming areas, the civilization was dispersed in a massive exodus across the territories of the kingdom (Lovgren, 2017). Nonetheless, since rural life in Cambodian territories was presumed to have maintained continuity in the long period after the fall of Angkor until the coming of the French colonizers, education in the temple schools across these territories was also believed to have continued in the same way and was observed by the French to have the same features that were observed by Chinese descriptions from the Angkorian era (Ayres, 2000).

Colonial Education

With the coming of the French colonizers came a new educational development, the introduction of the *modern* French schooling system which included the wider curriculum, methods of instruction, and teaching timetables of *classical education*. The first two secular schools were established in 1867 and 1873. The first was exclusively for children of the royal family and the second for children of French military officers and residents, Chinese merchants, Vietnamese immigrants employed in administrative positions by the French, and the Cambodian elite. Carrying similar fears of other colonizers, the French also were hesitant to educate the general population of Cambodians, lest they be empowered (Clayton, 1995, as cited in Dy,

2004). It took several decades before the French colonizers intended to educate the Cambodian peasantry, with the first official edict from the governor general of French Indochina, declaring that native children would receive an education similar to that of their French counterparts, being issued only in 1918 (Ayres, 2000).

Ayres (2000) further contended that, after some years of initial difficulties related to the inappropriateness to the local culture, the perceived insignificance of the agricultural nature of Khmer society, and the resistance of the native populations to sending their children to the secular formal schools, the French administration strategized to make use of the temple-schools by training the teachers of this existing network and eventually transitioning these into the Franco-Khmer public schools. He cited statistics, however, that strongly suggest that this was a failed project:

In 1932/1933, there were 225 modernized temple schools in Cambodia. By 1938/1939, the number had increased to 908. Franco-Khmer public schools, offering the full primary curriculum, numbered 18 in 1932/1933, with the same number of establishments in 1938/1939. Despite the policy of transformation, there was not a single Franco-Khmer primary school inaugurated during these years. Enrollments at Franco-Khmer primary schools increased by approximately 150 percent during the period, compared with almost 500 percent for modernized temple schools. In 1938/1939, only 294 students passed the *Certificat d'études primaires complémentaires* (Certificate of Complementary Primary Studies), despite the fact that almost 60,000 students were enrolled at primary schools. Full secondary education was offered for the first time only in 1935, when the Collège Sisowath was given full lycée status . . . Although some technical and administrative education was available, students from Cambodia wishing to pursue further studies were forced to travel to Saigon, Hanoi, or Paris. (Ayres, 2000, p. 25)

Zinoman (2013) asserted that such a system, having planted the seeds of political nationalism in the young minds of Cambodian students as an unintended consequence, further fragmented Cambodian society. This was because,

In addition to promoting integrative dynamics, including political nationalism, the growth of education under foreign rule deepened class stratification, ethnic division and

generational conflict. Moreover, colonial schools shaped the physical habits and bodily culture of a significant segment of the population, a change that set them apart from uneducated compatriots. (p. 46)

Other historical commentators also viewed the education that the French promoted as driven by socio-economic exploitation since it was primarily motivated by the desire to ease the dealings of the colonizers with the colonized and since there is no evidence of substantial investment in or sustained concern for the educational attainment of the entire population (Ayres, 2000; Chandler, 2008; Dy, 2004; Kheang et al., 2018).

Sihanouk's School System

After the country had achieved independence from French colonizers, Norodom Sihanouk led Cambodia in various capacities, first as King, then as Prime Minister, and then later as self-proclaimed Chief of State from the period of 1953-1970. In the beginning of his rule, he was able to persuade most of the Cambodian population to support his dreams for Cambodian post-colonial modernization. For many, this ironically meant supporting or ascribing to the kind of formal education system that the French had actually introduced and that majority of Cambodians originally resisted. The surge in numbers of enrollment that this caused in the initial years of Sihanouk's leadership and the lack of resources to properly provide a *modernizing education* would generate the first signs of what Ayres (2000) identified as an emerging crisis. International observers have pointed out that the Cambodian system of education was (a) built on the foundation of the French education system; (b) in need of being "tempered so as to be affordable and to provide time for the development of necessary resources" (Ayres, 2000, p. 38); and (c) in need of curriculum revisions to be made more suitable for the Cambodian context. The political situation of that time, however, was marked by the instability of a new form of

independent governance, growing communist insurgency in the countryside, violence and power struggle, and the uncertainty brought about by international interventions via the Geneva conference which had pushed for national elections. All this made the situation un conducive to educational reform. In the period after the elections, UNESCO representatives tasked to provide policy reform guidance in the country observed that, “educational demand outweighed supply, curricula were irrelevant, the quality of instruction was inadequate, and there was increasing disparity between the education system and the national economy” (Ayres, 2000, p. 39).

Attempts at the Cambodianization of schooling, further education reform, and massive expansion marked Sihanouk’s rule, but historians have differed in their general assessments of these reforms. On the positive side, they recognized that significant gains were made in increasing access to education for the general population. Whereas only .13 million children were enrolled in primary schools towards the end of French rule in 1950, there were more than one million students enrolled by the late 1960s. (Deighton, 1971, as cited in Dy, 2004). Dy (2004) also highlighted how Sihanouk’s efforts were great strides made over a few decades, compared to the little that was done for public education over centuries prior. Dunnet (1993, as cited in Dy, 2004) also claimed that in the 1960s Cambodia was ahead of most of its Southeast Asian neighbors in terms of literacy and establishing progressive education systems, thanks to Sihanouk’s efforts. Ayres (2000) asserted that the school expansion programs successfully helped to build the national Cambodian consciousness and to promote the presence of the state in the country’s rural villages through the schools and in the person of the teachers.

On the other hand, much criticism has also been voiced in terms of the failures of Sihanouk’s educational reform efforts. These include how the educational system (a) remained

biased towards the urban populations and failed to help rural students and their families mired in poverty (Duggan, 1996, as cited in Dy, 2004); (b) was put under extreme pressure to expand, for the sake of promoting a national image being projected by Sihanouk to the international community, without the necessary resources to sustain such an expansion (Ayres, 2000); (c) did not have the capacity to maintain the quality of education needed to further the modernization of the country that it sought (Ayres, 2000); remained essentially the French-designed system that was built to produce civil servants under French supervision (Ayres, 2004); (d) promoted a version of Cambodian history that centered on Sihanouk, glossed over the other actors and contributors to national development, exaggerated the glories of the Khmer civilizations past and said little of the slavery, exploitation, and patronage that their history involved (Ayres, 2000); and failed to consider the educational and development needs of the rural agricultural societies that comprised the majority of the Cambodian population.

Schooling in the Wartime

Beginning in 1970, with a coup that deposed then Chief of State Sihanouk and placed Lon Nol as ruler of the country, the Cambodian educational system began its descent into the chaos brought about by a civil war that would last for 20 years. Ayres (2000) noted how so much systemic destruction happened in a single year:

Increased insurgent control of government territory saw the closure, abandonment, or destruction of the majority of Cambodia's schools throughout 1970. While official policies in education called for the retention of pupils in rural areas and were intended to prevent a drift of poorly qualified youths into the cities, the realities of the civil conflict were dictating otherwise. In masses, refugees fled strife-torn areas. The increasing numbers of dislocated rural dwellers posed an educational dilemma, for by the start of the 1970/1971 academic school year, almost 40 percent of students attending primary schools in [the capital city of] Phnom Penh were refugees. Double, and in some cases triple, shifts were established within schools to cater to the eligible students. Certain elements of the

curriculum had to be eliminated to cater for the demand, while kindergarten classes ceased functioning. (p. 80)

The Khmer Rouge

In 1975, the Democratic Kampuchea Party (better known as the Khmer Rouge) seized control of the Capital and, in effect, of the whole country. This party was led by Paris-educated Cambodians, the most widely known of whom was, their leader, Pol Pot. Pol Pot and many of his cohorts returned to the country after their studies in France, where they were exposed to communist ideologies, to teach in public schools and universities during the later years of Sihanouk's rule. During that time, and after Sihanouk's deposition by Lon Nol, they had slowly but substantially built their support base in the countryside from among the many who were disgruntled by the abuses of these regimes and those who had been dreaming of a more egalitarian society for Cambodia (Ayres, 2000). When they successfully seized control from 1975-1979, Pol Pot's regime sealed the country's borders, closed down schools, converted some school buildings into torture camps, and systematically arrested and executed students, teachers, doctors, lawyers, engineers, academics—everyone suspected of having had a Western educational background (Choung Ek Killing Fields Museum, 2022). This was done in the name of the *Ongka*: the Khmer Rouge socialist dream of a purely agricultural society, free of Western influence. While it has been argued by some that the Khmer Rouge continued to educate citizens as a mode of ideological formation (Dy, 2004), formal education existed mainly in theory and in the rhetoric of Pol Pot. In reality, *school time*, for most of the children and adults who were made to study, primarily involved the learning of revolutionary songs (Clayton, 2005), repeated chants, and slogans that codified subservience, fear, and the dispensability of the individual (Choung Ek Killing Fields Museum, 2022).

The period that immediately followed (from 1979-1980) saw a haphazard nationwide effort to resurrect the formal education system by the succeeding People's Republic of Kampuchea, a regime propped up by Soviet-supported Vietnamese forces that invaded and defeated the Khmer Rouge (Dy & Ninomiya, 2003). The few surviving teachers or literate citizens (it is estimated that three-fourths were killed in the genocide) were encouraged to teach the illiterate. 6,000 schools were rebuilt or re-opened, which was not enough for the nearly one million school-aged children, who would mostly return to makeshift open-air *classrooms* under the shade of trees to be taught by teachers who received little training and little emphasis on quality of pedagogy. While some teacher training was given in the succeeding years, Dy and Ninomiya (2003) also noted that a major impediment to the education of children was the lack of adult supervision at home. The genocide had left 30% of the schoolchildren fatherless, 10% motherless, and 5-10% percent completely orphaned (Postlethwaite, 1988, as cited in Dy, 2004).

Despite the rebuilding efforts initiated by the Vietnamese-controlled government, the country essentially remained at war, with several factions in armed resistance and with over 750,000 Cambodian refugees (many of whom were combatants) fleeing to the camps at the Thai border (Dy & Ninomiya, 2003). This would be the state of affairs for 12 more years, until the signing of the Paris Peace agreement in 1991. Despite the treaty, the machinery of the Khmer Rouge would continue to inflict violence and terror in the remaining pockets of territories they controlled in some provinces, thus making it impossible for there to be regular schooling for thousands of schoolchildren in those areas until the party was completely dissolved in 1998 after the death of Pol Pot.

United Nations Transitional Authority in Cambodia (UNTAC)

In October of 1991 the Paris Peace Treaty was signed by representatives of 18 countries and four parties who had been at war in Cambodia since 1970 (i.e., the Royalist FUNCINPEC Party led by Norodom Sihanouk, the Vietnamese-backed Phnom Penh Government led by Hun Sen, the Democratic Kampuchea/Khmer Rouge party led by Pol Pot but represented by Khieu Samphan, and the anti-communist FLNPK led by Son Sann.) Months after, in 1992, the United Nations Transitional Authority in Cambodia was established and began operations in order to oversee the implementation of the Paris Treaty's stipulations and to facilitate the peaceful transitioning towards democracy in the country. Their mandate included matters "relating to human rights, the organization and conduct of elections, military arrangements, civil administration, maintenance of law and order, repatriation and resettlement of refugees and displaced persons and rehabilitation of Cambodian infrastructure" (United Nations Department of Peacekeeping Operations, 2003, para. 3). The United Nations Transitional Authority in Cambodia (UNTAC) was in place from February 1992 till September 1993, after the first elections were held in Cambodia.

Two significant developments in the Cambodian education system arose from that transitional period. First was the rise of the practice of extra tutorial classes or *riyen kua* (Marshall & Fukao, 2019), which coincided with the push for education by the UNTAC. This mandate of universal access to education had been carried forward by the succeeding regimes to the present time and was codified into the Medium-term Development Goals of the early 2000s and the Sustainable Development Goals of 2015. Brehm and Aktas (2019) suggested that the following factors led to the rise of *riyen kua* at that time: 1) increased enrollment; 2) decreased

educational expenditures (as advised by the international lending community); and 3) the failure to conceive of a taxation system that would support educational reform (which notably was an element in the government's 1995 educational development plans, but no longer in the goals mapped out in the early 2000s). "As more students enrolled in school at a faster pace than quality teachers could be trained or enough classrooms could be built, double shift schooling, overcrowded classrooms and shrinking teacher salaries became commonplace. This opened the door to the practice of private tutoring, a new form of partnership between households and schools" (Brehm & Aktas, 2019, p. 78). In succeeding years, the need for teachers to augment their income due to the very low salaries they continued to receive sustained this practice, through which teachers had found a substantial and apparently accepted means of financial gain. After teacher salaries were substantially increased in 2016 to an average of \$200-250 per month (from a previous \$50-100 in 2010) and in 2018 to around \$285-300 (Kimsong, 2018), many expected this would lead to the end of *riyen kua*. Subsequent studies have shown this did not occur.

Brehm (2022) also pointed out that during the period of the UNTAC the privatization of education (i.e., the decentralization of the responsibilities and costs of local public schooling from the national government to the local communities and parents of the students) was inadvertently institutionalized by the UNTAC's promotion of school-based management by the School Support Committees (SSCs). SSCs were conceived to empower members of local communities with monitoring and fund-raising responsibilities, thus promoting community financing and a sense of the collective involvement of citizens to support the education of all the children in their local community. Effectively, however, what the SSA resulted in was "de-facto privatization" (Velger et al., 2012, as cited in Brehm 2022) because of the large expectations by

the SSA for households to shoulder significant portions of the costs of their own children's education (e.g., school uniforms, registration fees, and extra class fees). This expectation would be deeply ingrained, such that, despite efforts of the Cambodian Ministry of Education Youth and Sports (Cambodian MoEYS) to increase public funding through national government budgetary support, the ways by which households "expected individual returns on their educational investments" (e.g., through paying private tutors) persisted widely at the time of this study (Brehm 2022, p. 33).

Hun Sen's Cambodia (1993-Present time)

After the UNTAC sponsored elections of 1993, during which the Royalist (FUNCINPEC) party of Norodom Sihanouk had won the majority vote, the power struggle continued, with Hun Sen's Cambodian People's Party (CPP) threatening to re-start the war if they were not given equal ruling rights in the newly established government. A power sharing arrangement was reached allowing for Hun Sen to be the Second Prime Minister, side-by-side with the Royalist party's Norodom Ranariddh (Norodom Sihanouk's son) as first Prime Minister, and with cabinet and administrative positions being shared by both parties. Eventually, after four years of this power sharing arrangement, Hun Sen deposed Ranariddh through a coup and ordered the execution of forty FUNCINPEC officials, and thus successfully claimed sole leadership of the country (Corfield, 2009). He has been the Prime Minister of Cambodia from 1997 to the present time and has been credited with having maintained peace in Cambodia ever since, but often at the cost of freedom of speech and other human rights (Strangio, 2014).

Despite the contentiously dark circumstances that have led to the present Cambodian *peacetime*, it is this present regime that has made it possible to return some sense of normalcy to

the provision of public education in Cambodia. The Cambodian Constitution (written in 1993 and amended in 1999) has several explicit provisions for the provision of public education. It stipulates that the state shall “assure the protection of children’s rights as enshrined in the Convention on Children, especially, the right to life, the right to education, the right to protection during wartime and the right to protection from economic or sexual exploitation” (Article 48); “protect and promote the right of the citizen to a quality education at all levels and shall take every measure to progressively make this education available to all the citizens.” (Article 65); and “ensure for all citizens free primary and secondary education at public schools. Citizens shall receive schooling for at least nine years.” (Article 68) (Constitutional Council of Cambodia, 1993). Subsequent legislation passed in 1996 empowered the Cambodian MoEYS as the central governing body responsible for organizing and regulating the delivery of this service, and the Provincial Departments of Education as responsible for supervising the Ministry’s orders in the various district levels. Additionally, the Cambodian National Assembly passed an Education Law in 2004, reiterating that “Every citizen has the right to access quality education of at least nine years in public schools free of charge” (Cambodian MoEYS, 2007).

Education in Cambodia at the Time of This Study

At the time of this research, basic education in Cambodia consisted of six years of primary schooling and three years of lower secondary schooling (see Figure 8) and was compulsory and provided for by the Cambodian government through public schools. Upper secondary schooling (Grades 10-12), while not compulsory, was also provided free of charge in public schools. Alongside the public schools were a growing number of private schools that did not receive any subsidies from the the Cambodian government but were subject to the same basic

result of the influx of resources from international development organizations like the Catholic Church that shared in the development goals of improving access to and quality of education for Cambodian children but that did not want to funnel these resources into public schooling due to the complexity of problems that beset the system (Prigent, 2019). Given the nation's tumultuous history that was discussed earlier in this chapter, the educational system, at the time of this study, was beset by several issues owing to faulty foundations on Western educational paradigms, two decades of civil war, and a genocidal regime that eradicated its education system. Public schools in Cambodia have been characterized as rote-learning systems bereft of arts and music education (Bray et al., 2016; Brehm, 2021). Teacher training needs in pedagogy and curriculum development have been vast (Hammond, 2018; Ogisu, 2022). Cambodian students have performed poorly compared to students of the country's Southeast Asian neighbors, with only 8-10% achieving the minimum level of reading and math proficiency (Cambodian MoEYS, 2018). Corruption has been widespread in the form of the systemic practice of teachers soliciting illicit school fees for "supplementary" tutorial classes during which time all the critical lessons are taught (Brehm, 2021; Hammond, 2018). Already, researchers have been seeing the impacts of such a system that inadvertently furthers a pedagogy of *uncare* and exploitation among Cambodia's young (Brehm, 2016). The problem of inequity, resulting from decades of educational development policies biased towards urban school populations, has persisted and was further exacerbated by the Coronavirus pandemic.

Poor Student Achievement

Two major findings of the Program for International Student Assessment—Development (PISA-D) in which Cambodia participated in 2017 were reflective of the levels of student

achievement in the country. Firstly, the report estimated that in Cambodia only 8% of students achieve the minimum level of reading proficiency and only 10% achieve the minimum level of math proficiency. Secondly, the report determined that only 28% of Cambodia's 15-year-old population had attained at least Grade 7, while the remaining 72% were either in grades below Grade 7 or out of school (Cambodian MoEYS, 2018).

In 2018, the United Nations Children's Fund (UNICEF) estimated that 55% of Cambodian students would be likely to have dropped out of school by the age of 17. Prior to COVID, the average drop-out rate of primary and secondary school students was 18-23% (with higher rates for provinces near the Thai border, where economic migration due to increasing poverty was common; Whong, 2019). Cambodia's rates remained high, compared to its neighbors in the Association of Southeast Asian Nations (ASEAN) such as Thailand, which had only 11-15% (Bruton, 2018), the Philippines with 6%-7% (Bostwick, 2020), and Vietnam with only 5.6% (Dang et al., 2021).

Based on longitudinal studies, No et al. (2016) found that parental divorce, negative or adverse relationships with peers (e.g., due to bullying or not belonging in their school), and late entry into Grade 1 were major factors that heightened the risk of students dropping out of school. They also noted that dropout rates varied greatly between schools in the same region and that high absenteeism was a reliable predictor of eventual drop out.

Heavy Reliance on Rote Learning

Many of Cambodia's educational reform strategies, from as early as the 1800s to the period of this research, have tried to move teachers and schools away from rote learning practices (Brehm, 2019). The literature, has suggested, however, that the use of rote learning

techniques has remained to be the pervasive and widespread as employed by most teachers in Cambodian public schools (Brehm, 2021; Chea & Chen, 2021; King, 2020). Various descriptions of such practices have included choral recitation, repetition drills, and students simply being asked to copy what is on the board and to commit this to memory (Brehm, 2021; Reimer, 2012).

Some research has suggested that the pervasiveness of the reliance on rote learning has historical, religious, and cultural roots. Hansen (2007, as cited in Brehm 2019) concurred that this pervasiveness was linked to the ancient Buddhist tradition in the temple schools, where monks were made to memorize the sacred Pali texts through repeated chanting and by copying these down on palm leaves. King (2020) opined that cultural factors such as the reverence traditionally given to teachers and elders and the status they gain from their role as being transmitters of knowledge are also factors that impede reform. Although the Strategic Plan of the Cambodian government (Cambodian MoEYS, 2019) explicitly states that the focus on improving the quality of education in public schools will entail the teachers promoting critical thinking and problem-solving skills as well as creative and divergent thinking, the data from the ground show that there remains much to be done in this respect.

Widespread Corruption in the Schools

One of the most significant yet highly contentious parts of academic life for public primary and secondary school students in Cambodia today is the reliance on *riyen kua* or extra tutorial classes. These classes are non-compulsory tutorial hours in which public school teachers supplement official class hours and for which they charge fees from students. As of 2020, the average fees charged by teachers was 1,000-2,000 Cambodian Riel (US\$.25 to US\$.50) per student per hour, depending on the proximity of the school to urban centers. Teachers normally

hold these classes in the government school buildings or in their homes and conduct them in much the same manner as the official classes (Brehm & Silova, 2014). According to Kobakhidze (2015), students spend an average of three hours per day from Monday to Saturday attending extra classes, besides the four hours of official classes they are required to attend on those days. In 2015, around 72% of public school students from Grades 7-12 in Cambodia who were included in a quantitative study attended *riyen kua* or extra classes (Marshall & Fukao, 2019). In 2019-2020, attendance at extra classes was further popularized to include schoolchildren from Grades 1-6 (T. Vong, personal communication, February 2, 2020).

While quantitative research has shown the high correlation of attending extra classes with the grades and passing rates of students (Brehm & Silova, 2014), qualitative studies have further exposed the disturbing nature of the reason for this correlation. As early as 2010, it was found that a common practice of teachers across the country was to withhold teaching matter related to examination questions during official class hours and to discuss these, along with other crucial lessons, only during the extra classes (Brehm & Aktas, 2019). More recent studies (Bray et al., 2018) and anecdotal evidence from youth in Church communities across the country have suggested that this practice was prevalent up until the period when this study was conducted. (J. Park & Q. V., personal communication, June 15, 2020).

These extra classes, along with other forms of educational support outside the formal system, have been referred to as *Shadow Education* (Bray, 1999). This term was originally used to depict how these practices outside the official system follow the contours, movements, and changes of the formal system, and how they remain hidden from the reach of policy and regulation. In more recent years, research on the global spread of *shadow education* has allowed

us to understand the contexts from which these extra-official practices arise, as well as to evaluate the negative impact of these practices on the education communities they were supposed to serve.

A review of the related literature shows that quantitative and qualitative studies have exposed the many negative impacts of the practice of paid-for extra classes in Cambodia. These negative impacts can be categorized in terms of a) direct impacts on the lives of students and the community; b) negative effects on the value systems and the educational environment; and c) negative implications on national development.

In terms of direct effects on the lives of the students, the practice in question has contributed to the high drop-out and repetition rates in public schools, given that the fees required by teachers for extra classes are substantial and are unaffordable for many low income families in Cambodia (Tan, 2007); given the encouraging of a sense of entitlement in the students who are able to pay, some of whom more courageously act out in misbehavior or by skipping class without fear of punishment, since teachers are less likely to admonish paying students (Bray et al., 2016); and given the negative affect on the self-image of the non-paying, non-tutored students, who internalize their teachers view of them being less capable in class (Bray et al., 2018; Marshall & Fukao, 2019). Bray et al (2018) also pointed out that, effectively, this practice unjustly denied students from low-income families the right to quality education. Consequently, poor relations between the teacher and members of the community (especially the parents and elders of the community) also resulted from this, given the animosity and passive-aggressive responses that this injustice caused (Tan, 2007).

On the level of the values system of the education community, studies have suggested that fee-based extra-classes have promoted a culture of corruption and impunity (Tan, 2007; Brehm & Silova, 2014; Kobakhidze, 2015; Marshall & Fukao, 2019); exposed the young to an unjust, exploitative environment in which higher grades are given to the paying students even if their real scores are lower than those of the non-paying students (Tan, 2007; Bray et al., 2018); strengthened the dominant patronage *winner-take-all* culture, in which the patron (i.e., the teacher) remains accountable only to his or her self and has no need to share power (Tan, 2007); tarnished the credibility of teachers who are supposedly the front-liners of educational reform (Kim & Rouse, 2011) and for whom the Khmer word, *kru*, is derived from the Sanskrit word, *guru*, which evokes deep reverence in most Eastern cultures (Dawson, 2010); and eroded any sense of accountability for teachers since laws officially banning this practice have been passed but have not been enforced since the 2000s (Tan, 2007). Perhaps most disturbingly, on this level, the said practice has promoted what Bray et al. (2016) have called a *pedagogy of uncare*. Referencing the work of Noddings (2013) which has highlighted the centrality of the caring relationship in the educational setting, these studies on Cambodian education have mirrored how the display of passion, care, enthusiasm, and attentiveness is often present only in the extra classes paid for by the students, but not in the regular hours of classes in the public schools. Students have consequently verbalized the feeling that the government and the larger community does not seem to have a genuine care for them and come to think that the attentiveness of the teacher is merely a marketized commodity (Bray et al., 2016).

On the national level, the extra classes have negatively affected the quality and efficiency of mainstream education, since much less teaching and learning of the critical lessons happens in

the official class hours (Tan, 2007). This has also promoted a system of inequality and stratification between the haves and have nots, with the latter consequently being given less access to educational progress, employment, and social mobility (Brehm & Silova, 2014; Kobakhidze, 2015; Marshall & Fukao, 2019). Moreover, shadow education in Cambodia has reduced the pressure for the national government to provide adequately for the financial needs of the teachers, due to the marketization of educational services on the school level (Bray et al., 2016; Marshall & Fukao, 2019); it has further enhanced the dis-engaged stance of the government towards the real needs of the student population (Prigent, 2019); it has impeded the development of trust in public institutions (Bray et al., 2016); and it has undermined the values of democratic educational empowerment, which, despite being generously displayed in rhetoric by the national government, is clearly negated and overshadowed by this state-enabled culture of patronage, clientelism, and hierarchical mode of relations in the educational system (Prigent, 2019).

These shadow education and rote learning practices in Cambodia have supported what Omokhodion (1989, as cited in Akande, 1998, para. 1 under the Concept Equivalence section) named the “ethos of *right answerism*.” Based on 120 hours of ethnographic study in primary schools of Lagos, Omokhodion observed that such an ethos is prevalent when

pupils are trained to believe learning is about getting the “correct” answer by any means, including cheating. Neither the teachers nor the pupils consider[ed] the processes of understanding the problem and of achieving the solution of any importance. Thus, a very superficial “surface approach” to learning is encouraged. (Results and Discussions section, para. 1)

Inequities in Education

Prior to the COVID-19 pandemic, several studies had already documented problems of inequity in the Cambodian Education system. Unaffordability of associated costs of schooling (Education Policy Research Center, 2018) and the inaccessibility of school facilities and a lack of means of transportation (Edwards et al., 2014; Idei et al., 2020; Kitamura et al., 2016; No et al., 2012; Velasco, 2004) were among the factors that have been shown to cause low completion especially for students coming from low-income families.

Students in rural areas have been further disadvantaged because of the poor school conditions more common there than in the urban settings (Bray et al., 2016; Ogisu & Williams, 2015) and because families in rural agricultural areas who need their children as farmhands tended not to value education as much as did families in urban areas (Edwards et al., 2016). In 2018, a study conducted by the OECD further revealed that:

- Students of urban schools outperform students of rural schools in reading with a performance difference estimated as the equivalent of more than a year of schooling.
- Advantaged students are about four times more likely than disadvantaged students to attain the baseline level of proficiency in mathematics.
- Disadvantaged schools tend to have fewer teachers and less experienced teachers than do advantaged schools. and
- Rural, disadvantaged, and public schools tend to have school facilities in worse condition than do urban, advantaged, and private schools. (Cambodian MoEYS, 2018, p. X)

Tandon and Fukao (2015) highlighted the unattractiveness of the teaching profession, especially in far-flung rural areas, as another factor that exacerbates the inequity with rural schools tending to have fewer and less experienced teachers than do the urban schools. The table

below, which presents data from the Cambodian MoEYS Public Education Statistics and Indicators reports (2017, 2018, & 2019), shows the disparities in achievement rates in Cambodian public schools disaggregated by urban and rural locations.

Table 6 illustrates how students in rural schools in Cambodia continue to be clearly disadvantaged. Students in rural areas consistently have a reduced chance of completing the school year or of graduating to the next level of study. They are less likely to complete primary and secondary schooling than are students in urban schools and, as I will expound in the next section, are also among the most vulnerable during times of crises.

Table 6

Cambodian Public School Student Performance Indicators Disaggregated by Urban/Rural Locations

Location/year	Promotion Rates (%)			Transition Rates (%)	
	G1-6	G7-9	G10-12	To Lower Sec.	To Upper Sec.
2018-2019					
Urban	91.9	85.7	81.9	96.2	98.6
Rural	88.9	80.7	80.8	83.6	69.3
2017-2018					
Urban	93.1	84.6	81.9	96.7	99.9
Rural	88.6	81.4	78.1	83.8	70.5
2016-2017					
Urban	91.3	82.9	81.2	94.1	94.6
Rural	88.2	80	76.1	83.7	68.5

Note. Data derived from *Public Education Statistics & Indicators* by the Cambodian Ministry of Education, Youth and Sports (MoEYS), 2017-2019, Cambodian Ministry of Education, Youth and Sports, copyright 2019 by the Cambodian Ministry of Education, Youth and Sports. Promotion rates are the percentage of students who successfully complete an educational level (including those who continue schooling in the next level and those who do not); Transition rates are the number of students who actually proceed to Grades 7 (for Lower Secondary) and Grade 9 (for Upper Secondary) upon completing Grades 6 or 8.

Inequities Exacerbated by COVID-19

On April 19, 2020, five weeks after declaring the closure of schools due to the threat of the COVID-19 pandemic, the Cambodian MoEYS launched a nationwide campaign to promote

distance learning. The Ministry's main platforms for this campaign were the Cambodian MoEYS Facebook page, a YouTube Channel, and a government-affiliated television network (Tum, 2020). While these platforms were known to have the widest reach among Cambodians, they remained problematic for an estimated 2.07 million (out of 3.33 million) students enrolled in public schools nationwide. These students were mostly children of Cambodian families in rural areas, who did not have the means to own televisions, satellite dishes, cellular phones, or computers. That only 53% of Cambodia's geographical area actually had high-speed internet as of 2020 further compounded this difficulty for students across the country (UNESCO, 2020).

Given the unprecedented magnitude and nature of the pandemic, many of the local schools, both public and private, were left by the ministry to cope on their own in facilitating the educational progress of their students. When representatives of the Cambodian MoEYS were asked whether or not there would be ways that the ministry could assist the students whose families could normally not afford internet or TV access, this was their reply:

The ministry encourages students who cannot study through smartphones and television to learn with those who have such equipment. . . This means for families that do not have televisions yet, the ministry encourages them to follow the educational programs at their neighbor's houses with less than 10 people and practice hygiene measures in line with advice from the Ministry of Health. (Purushotman & Leakhena, 2020, para. 5-6)

This situation highlighted the longstanding issue of inequity in Cambodian education extensively documented in the literature (Flynn & Himmel, 2020; Hoekstra & Sineat, 2020; Kanika, 2020; Purushotman & Leakhena, 2020). Scholars note that many problems of the Cambodian educational system have been related to two systemic causes. One was that the modalities being employed at the time of this study were patterned after the French system, a system that was inappropriately imposed upon an agricultural society that had, in the beginning,

little reason for application for the Western norms (Dy, 2004). This foreign system was never substantially adapted to serve the needs of Khmer society (Clayton, 2005). Another was that, for the five regimes that have ruled over the country for the past 70 years, education has been deemed important only insofar as it furthered the interests of the ruling parties or projected the image of Cambodia becoming a modern state (Ayres, 2000).

Inequities in education present a block to deeper learning, insofar as only children of the privileged are able to attend private schools that offer a better education, or, are able to pay for the necessary extra classes that provide the critical lessons. Inequity, however, serves also as an impetus for promoting deeper learning which enables students to engage and transform the unjust realities confronting them.

The State of Education Reform

Various educational reform initiatives have been attempted by the Cambodian MoEYS over the past two decades. These have focused mainly on pedagogy, teacher training, and, most recently, STEM instruction. Of late, the two education reform policies that have impacted deeper learning are the Child Friendly Schools (CFS) and the New Generation Schools (NGS). The Child-Friendly Schools framework, encouraged by UNICEF, was piloted in six Cambodian provinces in the early 2000s and then adopted as a national policy in 2007 (Phikun & Rodrigues, 2013). This framework is focused on the shaping of schools, especially those recovering from disaster and emergency situations, to become student-centered learning environments that are safe, healthy, and protective of the student's welfare (UNICEF, 2009). In Cambodia, this framework was considered in the construction of new schools, in the large-scale training of teachers, and in the creation of educational materials from the time it was adopted as national

education policy in 2007 (Berkvens, 2017). Thus far, the recent empirical studies on the implementation of CFS programs have been scarce and mainly focused on particular fields of this policy such as pedagogy and teacher training (Berkvens, 2017; Ogisu, 2014, 2022; Tan, 2010; Tandon & Fukao, 2015) and primary school leadership (Kheang et al., 2018). These studies produced findings that evidenced how, although CFS has helped to improve school environments, making them safer for children and increasing the awareness of the importance of protecting the welfare of children, the manner in which CFS has been implemented in Cambodia has done little to advance genuinely student-centered learning approaches in public schools (Berkvens, 2017; King, 2020). Ogisu (2017) argues that Effective Teaching and Learning (ETL)—the wider educational policy mandating the use of student-centered learning for all Cambodian schools and under which CFS is subsumed—is laden with problems relating to a lack of clarity in the basic assumptions and definition of ETL in the Cambodian context, tensions between the transformative nature of this approach and the traditional transmission-based approaches that teachers have been using to implement these reforms, and political and cultural factors that are hindrances to the promotion of this approach.

The hierarchical nature of Cambodian society, compounded by the reverential status that teachers attain as wisdom figures, runs counter to SCL, which privileges the student as the center and prime agent of the learning process (Ogisu, 2018, 2022; Reimer, 2012). Berkvens (2017) established through his study that the Cambodian cultural profile features a relatively high propensity to avoid uncertainty, to accept power differences that they do not necessarily appreciate, and to value collectivist behavior, all of which has further complicated the adoption of SCL. Despite these socio-cultural incongruities and socio-political dynamics (e.g., multi-

lateral funding for projects through which several developed countries have asserted their influence over development in Cambodia), Cambodian officials have often had to give way to the insistence on SCL by these international players in education reform. As such, SCL, through the Effective Teaching and Learning (ETL) paradigm of the Cambodian MoEYS, has dominated the official discourse on educational policies, though it failed to have a genuine impact on common practice in the majority of public schools across Cambodia, which fell far from SCL (Ogisu, 2022).

Among these empirical studies, only one, that of Çobanoğlu et al. (2018) has applied a more wholistic approach to looking at various correlations between the different components of CFS implementation. In a mixed methods study conducted in 54 schools and with 4,007 students across Cambodia, Çobanoğlu et al. measured student perception of the degree to which CFS had effectively been applied to their school based on four factors distilled from the CFS framework and the UN Convention on the rights of the child, on which this framework is based. These four factors were effectiveness and inclusiveness, protective precaution and participation; health and security; and management of relations. While the study shed light on how socio-economic levels and gender and grade level affected the perception of students regarding how child-friendly their schools were, the study was not designed to assess how or whether or not the CFS approach has led to greater student achievement or deeper learning.

Also notable is a recent case study on three government primary schools (King, 2020) which looked at how local culture impacts classroom practice in Cambodia, focusing on how ETL and SCL were being practiced (or not) in these schools. King found that in these schools SCL practices were merely being subsumed under the traditional non-constructivist learning

paradigms that continued to prevail in the country. She concluded that this was not only a sign of the ineffectiveness of SCL approaches, but also of how the wider educational policies on CFS and ETL had failed to acknowledge the positive and inherent value of rote memorization practices in Cambodian school settings. Citing other studies from Southeast Asia, she admitted that “memorization is a cultural approach to learning that can lead to deep understanding, particularly when used in conjunction with other learning methodologies” (King, 2020, p. 386). In a word, it was not the reliance on memorization practices *per se*, but the short-sighted use of these, that was counter to deeper learning. The literature, however, suggested that the Cambodian MoEYS policies did not reflect such nuances but, rather, merely pitted traditional practices against ETL and that the failure to account for socio-cultural considerations was primarily why the gap between the policies and their hoped-for effects on student learning in Cambodia remained vast (King, 2020; Ogisu, 2022).

The Need for Deeper Learning in Cambodia

In Chapter 1 of this study, I identified various drivers of the global need to promote deeper learning. These drivers are all present in the country context of this research. Rapid socio-economic change, increased reliance on technology and the internet, globalization, the proliferation of fake news and populist propaganda, devastating effects of climate change, longstanding inequality, and grave social injustices were among the realities dramatically affecting the lives of students in Cambodia at the time of this study.

Cambodia has seen rapid economic expansion over the last two decades. Globalization and, in particular, the ease with which it has allowed Cambodia to expand its garments export market as well as its tourism industry, has been the primary enabler of this rapid economic

expansion (Mah, 2017). These two industries have contributed greatly to Cambodia's transitioning from being one of the poorest countries in the South East Asia of the 1990s to being classified as a lower middle-income country (World Bank, 2021) for almost seven years now. In 2019, Cambodia's largest exports went to the United States (\$5.78B), Singapore (\$2.33B), Thailand (\$2.07B), Germany (\$1.94B), and Japan (\$1.79B; Observatory of Economic Complexity, 2021). The tourism industry was, until recently, Cambodia's second largest contributor to its post-conflict economic development. In 1993, Cambodia welcomed 118,000 tourists to the country. This number would steadily rise year after year, such that by 2004 there were 1.05 M tourists who visited Cambodia. In 2018, there were 6.2M (Cambodian Ministry of Tourism, 2019). The industry has been hard-hit, however, with only 1.3M tourists able to come in 2020 and 196,495 in 2021 due to the coronavirus pandemic, manifesting a 97% drop from the peak of 6.6M in 2019 (Kunmakara, 2022).

While globalization has helped Cambodia economically, some argue that it has exacerbated the educational problems of "marginalization, increasing inequality, increasing commercialization at the expense of public service and national needs subjugated to global goals and profit" (Altback, 2001 and Mehamedbhai, 2002 as cited in Howes & Ford, 2011, p. 162). Around 20-25% of Cambodia's population is estimated to live in urban areas which have seen hyper-development and wealth explosion for the privileged classes over the last two decades (Strangio, 2014). Many of the 75-80% of the population, however, have lower-middle class incomes and live in the rural areas. Of those living in rural areas, 20-22% continue to live below the poverty line (Khmer Times, 2021), have no access to drinking water, and have only limited access to sanitary facilities (Central Intelligence Agency, 2022). Despite the economic progress

of the country, equity indicators have shown that Cambodia continues to fall far behind other lower middle-income countries in terms of human capital development and education. The

World Bank (2021) published this appraisal:

A child born in Cambodia today will be only 49 percent as productive when grown as she could be if she enjoyed full quality education, good health, and proper nutrition during childhood. An estimated one in three children under the age of five suffer from stunting and only 36 percent of children between three and five years old are enrolled in early education. While net enrollment in primary education increased from 82 percent in 1997 to 97 percent in 2020, lower secondary completion rates are at 45 percent in 2019. . . . Key reforms are needed for Cambodia to sustain pro-poor growth, foster competitiveness, sustainably manage natural resource wealth, and improve access to and quality of public services. (para. 5)

Compounding the problem of inequity was the problem of impunity and a weak justice system that favors the wealthy and that further enables social injustices (Joshi, 2020; Tat & Bagshaw, 2014). Over the last decade, for example, there has been a gradual increase in the number of cases of land grabbing and forced evictions, both in rural Cambodian villages as well as in areas affected by urban development (Jiao et al., 2015; Joshi, 2020; Voice of America [VOA], 2020). As of 2014, the International Federation for Human Rights (FIDH) estimated that 770,000 Cambodians were affected by land grabs involving over 4 million hectares of land (Flynn & Vantha, 2021). These cases involved Cambodians in rural areas who had lived and toiled on their land, some for over twenty years, but who never had the opportunity to obtain land titles due to the inadequacy of the government's land titling system after the Khmer Rouge regime. Urbanization and the industrialization of agribusinesses across the country in recent decades have driven growing interests in consolidating properties and in investments by larger corporations. These corporations are able to secure land titles more easily, often at the expense of small landowners with no documentation to support their claims to the land (Tat & Bagshaw,

2014). In 2020, the Cambodian Ministry of Interior admitted that the difficulty in resolving such land dispute swas that a significant portion of these cases involve senior government officials (Lipes, 2020).

Logging and sand quarrying continue in large-scale operations and in ways that have directly and negatively impacted poor local communities in Cambodia. Massive logging operations, some with legal forest concessions awarded to large corporations with political backing or ownership, have resulted in irreversible biodiversity loss and *de facto* land or resource-grabbing, depriving poor farming and indigenous communities traditionally reliant on the living forests as sources of food and livelihood (Amnesty International, 2021; Scheidel & Work, 2018). Sand quarrying and in-filling for urban development, termed *sand exploitation* (Marschke et al., 2021), destroys ecosystems, affects irrigation and flooding patterns, and thereby upends the livelihoods of fisher and farmer communities, often at the margins of these developments (Beiser, 2019; Marschke et al., 2021). In such cases, the aggrieved parties have been left without recourse for legal redress because of the weakness of the Cambodian justice system and because the companies of the offending parties are owned either by the politicians and government officials themselves or by their friends (Amnesty International, 2021; Marschke et al., 2021).

Technological developments and heavy reliance on internet social media platforms have also made the Cambodian population highly susceptible to the proliferation of fake news. In recent years, Cambodians have been among the global populations that have subscribed heavily to Facebook, and recent surveys estimate that one third of the country's 17M population relies on Facebook as their source of news (The Asia Foundation, 2016, as cited in Devanesan, 2020).

Over the last two years, the Ministry of Information has signaled a growing concern for the proliferation of fake news posts on social media platforms such as Facebook, TikTok and YouTube, saying that in 2020 and 2021 they screened an average of 2,000 cases per year. Among these cases are what the Ministry has classified as posts “intended to incite criticism of the government via disinformation . . . cases of insults to the King and the nation’s leaders, and . . . cases of fake news with the potential to cause social chaos” (Seangly, 2021, para. 2). Political commentators, however, have pointed out that the leaders of the current regime have themselves used *fake news* claims to discredit, silence, and arrest truthful government critics and reporters highlighting negative but accurate aspects of Cambodian realities today (Lamb, 2018; Vannarin, 2018). In doing so, these officials themselves became purveyors of falsehoods.

Finally, for some years now, the extreme weather brought about by changes in the climate has already severely impacted Cambodia. Record-breaking highs in temperature, at 42.6 degrees Celsius (1.5 degrees hotter than the average), were felt in several parts of the country in the summer of 2016 (Kossov, 2016), causing the death of livestock, crops, and farm and forest animals (Thompson, 2016) and prolonged periods of fires in flood forests that had dried up (International Union for Conservation of Nature, 2016). The World Bank Group and the ADB (2021) have projected that the average increase in temperature in Cambodia over the next 50-60 years will be 3.1 degrees, double the average increase that scientists have been warning will have disastrous environmental effects, thus placing marginalized populations in Cambodia at very high risk not only from extreme heat, but also from severe floods and droughts. UNICEF (2022), on the other hand, has placed the children in Cambodia among the top one-third of children

across the world who are the most vulnerable to the climate crisis which threatens their health, education, and safety.

Deeper learning approaches present an opportunity for the children and youth of Cambodia to participate meaningfully in engaging and changing these realities and in seeking solutions to these global problems that have an enormous impact on them. Educators in Cambodia who promote deeper learning will also, in effect, be producing a powerful instrument for promoting social justice, climate action, responsible citizenship, and political empowerment.

In summary of the reviewed literature, the various dimensions of deeper learning include the cognitive processes and affective components engaged by deeper learning approaches, dispositions which serve as critical pathways to deeper learning and which are formed by deeper learning, the goals and competencies of deeper learning, the elements of deeper learning design, and the ethic of deeper learning schools. Schooling in the Cambodian context, on the other hand, has been significantly impacted by the tumultuous historical development of the Cambodian school system, as well as by complex socio-cultural factors that foster a heavy reliance on rote learning methods, corrupt schooling practices, and a resistance to student-centered learning approaches. These factors have exacerbated the inequity and poor student achievement which continued to beset mainstream Cambodian basic education at the time of this research. Lastly, this review of the literature also focused on the social milieu of Cambodia at the time of this study and how the various global drivers of the need for deeper learning were present there at that time. This case study was therefore designed to explore the various elements of deeper learning that were observable in the MMS, as well as the reciprocal impact of these elements and the socio-cultural factors and drivers of the need for deeper learning there.

CHAPTER 3

METHODOLOGY

The purpose of this study was to explore deeper learning in the MMS, a K-12 mission school that catered primarily to students from poor socio-economic backgrounds in a rural province of Cambodia; to identify characteristics of the school that made it conducive to deeper learning; to document what deeper learning approaches were effectively fostered there; and to highlight key challenges and opportunities for doing so at the time of the research. Toward this end, I employed qualitative research methods, in particular, the case study methodology, to gather, analyze, and report the data. This case study was a single, embedded case study, focusing on the MMS as a singular site for data collection, but documenting multiple sub-cases of deeper learning occurring there. For data collection, I conducted interviews, focus groups, and on-site observations. Respondents included teachers, administrators, and students of the secondary school of the MMS. I also gathered and reviewed available school documents (reports, strategic plans) and promotional materials (videos, brochures, and webpage content), both those accessible on-line and in the school archives.

Research Setting Background

The MMS is a K-12 mission school that was established in 2013 by a Catholic order with a longstanding tradition of promoting liberal education in schools and through youth programs around the world. Liberal education seeks the holistic (intellectual, psycho-emotional, spiritual and physical) development of individuals towards forming men and women who will embody the Christian values of service and concern for the common good (Boston College, 1994). Catholic schools that promote a liberal education employ pedagogical practices to develop

critical thinking, reflection, and action guided by critical reflection that addresses social and global issues (Mitchell, 1988; O'Malley, 2000). While “deeper learning” terminology has not often been used in such Catholic schools, elements of deeper learning identified in the introduction of this study were clearly present in their educational tradition.

The experience of MMS in providing for Cambodian schoolchildren quality education in line with the Catholic tradition presented a unique opportunity to understand deeper learning and its enabling factors in the Cambodian context. Over the past thirty years since the re-establishment of peace in Cambodia, education reform towards providing quality education in the public school system has been arduous and has seen little progress. Many of the studies to date have depicted public schools in Cambodia as rote-learning systems bereft of arts and music education (Bray et al., 2016; Brehm, 2021). Teacher training needs in pedagogy and curriculum development have been vast (Hammond, 2018; Ogisu, 2022). Cambodian students have performed poorly compared to students of their Southeast Asian neighbors, with only 8-10% achieving the minimum level of reading and math proficiency (Cambodian MoEYS, 2018). Corruption has been widespread in the form of the systemic practice of teachers soliciting illicit school fees for “supplementary” tutorial classes during which time all the critical lessons are taught (Brehm, 2021; Hammond, 2018). Meanwhile, the establishment of MMS ushered in a promising, new micro-education environment, making it an ideal research setting for this case study. The MMS experience thus far shed light on critical pathways towards promoting deeper learning for rural schools in Cambodia and presented viable models for doing so.

Research Questions

My primary question for this research was “What does a deeper-learning school look like in Cambodia today?” Guided by this question, I investigated the organizational culture, emotional atmosphere, physical environment, learner attributes, and the quality of relationships at the MMS, insofar as they were determinants of the deeper learning environment there. Secondary questions in support of my primary research focus were “What practices to promote deeper learning are effectively employed there?”; “Why is deep learning deemed important by teachers, administrators, and students there?”; and “What opportunities and challenges do they face in promoting deeper learning?” These questions allowed me to explore the experience of promoting deeper learning in Cambodia by noting characteristics of the MMS which matched characteristic patterns of deeper learning schools elsewhere, as well as approaches or traits peculiar to the MMS but which resulted in deeper learning.

Methodology: Single Embedded Case Study

For this exploration of deeper learning in Cambodia I chose to employ qualitative research methods towards an embedded, single-case study design (Yin, 2018) strengthened by a mini-ethnographic approach to gathering and interpreting data. The single-embedded case-study design allowed me to focus on the MMS as the singular site for data collection but investigating multiple sub-cases of deeper learning there and determined how I gathered, processed, and analyzed the data. Although this was a singular case study on the experience of one particular school, I investigated several instances or *sub-cases* of how powerful learning experiences were enabled to foster deeper learning. These sub-cases were subsumed into a systemic view which framed the school community as one integrated system. I purposefully chose this research

design as it dovetailed with the assertion that, in order to implement educational reform effectively, systems-thinking must be applied to approaches towards problem solving (Fullan, 2020; Owens & Valesky, 2015).

My choice of doing qualitative research was guided by the exploratory nature of my research interest. Although there have been empirical studies on education reform initiatives towards improving the quality of education in Cambodia, none have used the deeper learning frameworks that I employed. From the onset of this research, I realized that the deeper learning frameworks I was utilizing as initial handles or frames with which to approach the data could eventually be proven inappropriate or inadequate (e.g., due to Western bases for their formulation). Thus, a descriptive (and not an evaluative) approach to presenting the data allowed for the openness to this possibility. I therefore chose a qualitative research design which was open to both descriptive and exploratory approaches (Leavy, 2017) for deeper learning and which facilitated “insight and understanding [on deeper learning in a rural Cambodian public school] that can apply to similar settings or situations” (LMU School of Education, 2022, p. 15).

I chose the case study method, which researchers deemed appropriate (a) when seeking to answer questions of *how* and *why* (i.e., pertaining to methods and effective means, in this case, to fostering deeper learning in Cambodia); (b) when addressing a contemporary concern; and (c) when the researcher has no control over the phenomenon to be observed (Yin, 2018).

Importantly, case studies “illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what results” (Schram, 1971, as cited in Yin, 2018).

Illuminating the decisions and actions made by school leaders, teachers, and students that have helped to foster deeper learning at the MMS is my aim throughout this research. The mini-

ethnographic approaches I employed to strengthen the case study method, on the other hand, were prompted by the need to also highlight the organizational culture and values that supported deeper learning and to more fully appreciate the situated perspectives of members of the school community. Ethnographic approaches have enabled researchers to effectively explore these aspects of social phenomena (Reeves et al., 2008). While ethnographies traditionally entail years of data gathering due to the complexity of cultures and social systems, mini ethnographies (also known as focused ethnographies) require less time and resources, due to the more specific and de-limited nature of the inquiry and can be conducted within as short a period as one week (Fusch et al., 2017).

This blended design using a case study methodology strengthened by ethnographic approaches is what some researchers have called the mini-ethnographic case study design (Dobbins et al., 2021; Fusch et al., 2017). The combination of these methods of research allows for “focused inquiry in the field by analyzing sociocultural systems ethnographically while bounding the subject of inquiry within a specific case” (Dobbins et al., 2021, p. 398). It also enables “researchers to explore causality links, which is not typical for ethnographies . . . and to generate as well as study theory in real world applications” (Fusch et al., 2017). Given the purpose and research questions of this study, as well as the limited time and resources available for its conduct, this blended approach was ideal for all the above-cited reasons.

The meta-theory that guided this inquiry was Critical Realism, a branch of philosophy that originated from the works of Harré and Madden (1975) and Bhaskar (2008) and that bridges the extremes of positivism and constructivism by furthering two levels of objectivity: the ontological and the epistemological (Porpora, 2015; Scott, 2005). Briefly, this means that there

are realities which exist independent of a learner (i.e., that they are ontological), but that a learner comes to know or access these realities through socially constructed schemas of knowledge and understanding, albeit always in a limited capacity that precludes absolute certainty of the perfect correspondence between the known object and what the learner knows of it. Scott (2005) expounded on the implications of a critical realist approach applied to education research as follows: firstly, that “holding a belief that an independent reality exists does not commit one to the view that absolute knowledge of the way it works is possible”, secondly, that “meta-theory influences the way data are collected and analysed about the social world” (para. 5), and, thirdly, that understanding evolves, and, with it, so does reality.

Critical Realism applied to educational research determined how I formulated the parameters and frameworks for this study as well as how I gathered, processed, and analyzed the data. Learning processes are objective realities experienced by learners which cannot be challenged existentially or ontologically because of the observable and measurable cognitive, emotional, and social manifestations of learning. Learning processes are objective insofar as they are, to a certain extent, observable, measurable, and controllable. In a way, the whole of the educational enterprise has been geared to maximize the controllability of learning processes for increased human benefit. Human conceptions of what learning processes entail, however, are socially constructed, and their truthfulness, therefore, is inter-subjective, fallible, and evasive of absolute and definitive comprehension. *Deeper learning*, being the case in point, is one such conception or construction of an idealized form of the learning process. This exploration, therefore, sought to investigate the experience of deeper learning, as well the ways that this experience is understood and controlled within a context that has thus far been overlooked,

thereby expanding the intersubjectivity on which *deeper learning* frameworks are based. The descriptive nature by which I presented the data, occasionally supported by abstractions about deeper learning, does not preclude other explanations about observations made in this study. As a case study, this research veered away from a conception of an absolute and all-encompassing approach to promoting deeper learning and acknowledges the necessity for context-bound and continuously evolving approaches.

Data Triangulation

The triangulation of data which was necessary to ensure the validity, credibility, and trustworthiness of this case study (Leavy, 2017) occurred on two levels: first, on the screening and purposive selection of subjects for the semi-structured interviews and focus group discussions; second, on the various sources of data, other than the semi-structured interviews and FGDs. Subjects for the semi-structured interviews included not only students, but teachers, school administrators, and the founder of the school. This helped to ensure the inclusion of various perspectives of members of the MMS community, especially those of the proponents of deeper learning and of the deeper learners themselves. Various sources of data complemented information obtained from the semi-structured interviews and focus groups, including direct classroom and school-site observations, school documents, and archival media that evidenced how deeper learning was purposefully promoted in the school.

Positionality

Several factors relating to my position as a researcher served to my advantage in obtaining reliable data for this case study. Firstly, my being a Catholic priest gave me access to the MMS in Cambodia since the school was founded by a Catholic organization. (See

Appendices A and B for my initial correspondence with the school director.) My training and experience as a priest allowed me to understand the ideals of the MMS that were derived from the Catholic educational tradition. Despite most of the members of the MMS community being Buddhist, their exposure to and dealings with Catholic priests (administrators and teachers in the school and pastors in the nearby Church) has been highly positive over recent years. These experiences have created a positive regard and reputation for missionary priests in the community and helped me gain the trust of the teachers and the students during the interviews and focus group discussions. Secondly, prior to this research, I had never worked in nor been associated with the MMS in any professional capacity. I had also never lived in the school or in the province in which the MMS was located. As such, while I was acquainted with the director and school principal, I did not know the teachers or the students of the MMS, and I had no personal relationships with them prior to this research. Thus, I did not have prior judgements or impressions that may have affected my perceptions and observations for this study. Thirdly, I had lived and worked in Cambodia from 2009-2011 and from 2015-2020 and was proficient in speaking and reading the Khmer language. This language proficiency allowed me to conduct the interviews without the aid of an interpreter and, over the course of interviews, to make adjustments to the interview protocols in order to evoke deeper responses to the probes, establish rapport, and gain the trust of respondents. Additionally, as a Filipino who has lived and worked in Cambodia for over seven years, I have also gained an insider-outsider's perspective on Cambodian cultural dynamics and inter-personal relations. Finally, my work experience in rural Cambodia, both as Vicar Delegate for Planning and Development who facilitated strategic planning processes for the Catholic Diocese in Battambang and as parish priest for three years in

another province there, had given me previous experience of applying systems-thinking approaches in rural Cambodian community settings.

Instrumentation

Appendices F to H contain the interview and FGD protocols I developed for this research. I based the structure of these protocols on the research questions, the conceptual framework of this study, and most importantly, on the nine core values of the MMS.

These nine core values were contained in the school website and promotional materials and were regularly featured in newsletters of the school which highlighted how these values were promoted and enacted in school practices and special events. After initially examining these values, I perceived their alignment with many of the goals of deeper learning in the conceptual framework. As such, I hypothesized that these values could play an important role in bridging the everyday lived learning experiences of MMS members to the different components of my conceptual framework for deeper learning. I therefore framed most of my focus group and semi-structured interview questions in the protocols using these values as handles or platforms from which to further explore deeper learning.

After developing the research protocols, I tested the interview protocol with a colleague of mine who is the principal of a Catholic school in the Philippines, via a mock interview. After the mock interview, I evaluated and fine-tuned the protocols based on her responses to the questions and her feedback about her experience of the interview as well as on my own assessment of the mock session. I then adjusted the protocols to sharpen the instrument's focus and minimize the time necessary for interviews.

Data Collection

For data collection, I undertook an immersive approach, spending a total of 21 days on the MMS campus. These 21 days were spread across a three-month period through mid-August, early September and late October of 2022. On those days, I conducted interviews and focus group discussions, observed classes and campus activities, wrote detailed field notes and reflective memos, and had informal interactions with participants in the study during school hours. After school hours, I lived in the faculty housing facility on campus which houses the non-Cambodian faculty and staff of the school, during which time I had the opportunity to interact informally with some of the participants, sharing meals and common recreational and religious activities with them. Living and working in the MMS allowed me various modes of interaction with the research participants and their colleagues through tangential involvement in the community life of the school. Such an immersive approach was reflective of the methodology applied by researchers conducting mini-ethnographies (Dobbins et al., 2021; Fusch et al., 2017) and was invaluable to my data gathering process, facilitating relationship and trust-building with participants and deepening how I understood their rationalities and value-systems. Both trust-building and deeply engaging the rationalities of participants are crucial to ethnographies (Dumont, 2022) and were key to strengthening the validity of the data I collected for this case study.

I conducted all focus-groups and most of the semi-structured interviews in the Khmer language, with the exception of the interviews with the three administrators who were non-Cambodians, which I conducted in English. I also studied documents, archival records, and artifacts (e.g., reports, strategic plans, promotional materials, videos, brochures, webpage

content, and school blogs.) In total, I conducted nine semi-structured interviews with faculty and staff of the school, and each took 45 to 60-minutes. I also conducted three semi-structured focus groups with 5-8 participants each and with 18 participant students in total.

After an initial round of data scanning, I determined that follow-up interviews would be helpful to further deepen some discussion points. I arranged and conducted these interviews (shorter in duration, each only lasting 15-20 minutes) with five more participants, including the Principal, School Director, two students and one administrator.

Six weeks after my data gathering period, I prepared a summary of my preliminary analysis and initial findings and sent this to the teacher and administrator participants to allow them to clarify points or discuss possibly inaccurate or contentious analysis of the data. Only one participant responded, saying he thought that the findings were interesting and looked forward to learning more upon publication of the research.

Participant Selection

Through purposive sampling, I invited three administrators, five teachers, one teacher-administrator, and 18 students, to participate in this study, all of whom consented ($N = 27$). Of these teachers and administrators, five were female and four were male. Among the 18 students, eight were male and ten were female. In selecting the administrators to include in the study, I invited school leaders with decision and policy-making authority, depth of understanding of the school's values and organizational objectives, and long-term experience in working at the MMS. These included the school director, the secondary school principal, the human resources department head, and the school's founding director who at the time of the study had already retired from the school. I then obtained recommendations from the director and the secondary

school principal for teachers and students whom I could invite to participate in the study. I provided them specific criteria that would help in their selection, namely, teachers with at least five years of teaching experience and who were reputed in the school to be engaging and effective in their pedagogy based on performance appraisals and feedback from students on the one hand, and, on the other, students who were articulate, observant and who exhibited high levels of engagement in classroom discussions. These purposive sampling methods were consistent with ethnographic approaches, in particular, criterion-based, reputational-case selection (LeCompte & Preissle, 1993).

For the student participants, I conducted three focus groups, each of which was audio-recorded and lasted 60 to 90 minutes, with five to eight students per group. Each of the groups were mixed, with male and female students from Grades 8-12. I purposefully conducted FGDs with the students (instead of individual interviews) to provide a less threatening experience for the students and to maximize on the limited time for data gathering. After the first round of interviews and focus groups and some initial analysis, I conducted two follow-up interviews with student participants and one administrator towards the end of my immersion in the MMS.

For both students and teachers included in the study, several participants had previously taught or studied in the local public schools. Their perspectives significantly enriched the discussions because of the differences they identified between approaches taken in schools they previously attended and those of the MMS's.

Other pertinent details about each of the participants can be found in Table 7.

Table 7*Background Information of Study Participants*

Pseudonym	Roles	Age	Gender	Grade Level	No. of years at MMS	Teaching experience	Place of Origin
Devi	Student	14	F	G9	3		Local
Dara	Student	15	M	G9	3		Local
Mau	Student	15	F	G10	2		Local
San	Student	15	F	G11	5		Local
Kolab	Student	16	F	G10	3		Local
Phak	Student	16	M	G10	4		Local
Chivy	Student	16	F	G10	4		Local
Reaksmeay	Student	16	F	G11	4		Other Province
Chea	Student	16	M	G8	2		Local
Atet	Student	16	M	G8	1		Local
Kakada	Student	17	M	G11	6		Local
Chanda	Student	17	F	G11	6		Local
Tola	Student	17	F	G11	6		Local
Senghai	Student	18	M	G12	6		Local
Bunroeun	Student	18	M	G12	6		Local
Thida	Student	18	F	G12	5		Local
Rithy	Student	18	M	G11	3		Phnom Penh
Romyol	Student	19	F	G12	6		Siem Reap
Nekru Chivet	Biology Teacher	23	F		1	1 year	Local
Nekru Panya	Khmer Lit. Teacher	27	F		5	7 years	Local

Table 7 (continued)*Background Information of Study Participants*

Pseudonym	Roles	Age	Gender	Grade Level	No. of Years at MMS	Teaching Experience	Place of Origin
Nekru Bopha	Earth Science Teacher	29	F		6	6 years	Local
Louk Bop	HR Director	30	M		6		Local
Principal Lina*	Principal / English Teacher	33	F		6	9 years	SE Asia
Louk Kon	English Teacher	33	M		9	10 years	Local
Nekru Rotha	Morals Teacher	36	F		6	13 years	Other Province
Louk Son	Director	49	M		1.5		East Asia
Louk Sean	Founder/ Former Director	64	M		6	27 years	Western Europe

Note. N = 27. Male = 12. Female = 15. Students = 18. Teachers = 6. Administrators = 4.

* Principal Lina is counted among both teachers and administrators.

Data Analysis

The first step in the data analysis was translating all Khmer language recordings into English. Translation involved a three-step process. Firstly, I commissioned a highly qualified native Cambodian speaker with highly proficient English language skills and a background in education and philosophy to translate all the Khmer language recordings into English language audio-recordings. Secondly, I transcribed all the translated English language recordings. Thirdly, I reviewed the transcriptions of the English translations while simultaneously listening to the original Khmer language recordings and made corrections or additions as necessary, to ensure that no pertinent details or nuances of expression and inflection from the original Khmer language interviews were left out. Upon encountering some words which were difficult to translate, I referred to the Choun Nat on-line Khmer-to-English dictionaries and to Google Translate, selecting the most appropriate translations.

After transcribing all the content from the interviews and focus groups (i.e., English translations of interviews and focus groups and interviews done in English), I proceeded to review, analyze, and code the data from the transcripts, field notes, reflective memos, and other archival materials. As a general strategy, I applied the theoretical propositions that led to this inquiry of deeper learning, as suggested by Yin (2018), based on two of the identified paradigms of Fullan et al. (2018) and Mehta and Fine (2019). These propositions (of what constitutes deeper learning, what competencies are built-up by this, and how deeper learning is fostered) shaped the research questions, data gathering approaches, and the analysis of the data. Analytic techniques that I employed were pattern matching (Trochim, 1989, as cited in Yin, 2018) and the logic model (Yin, 2018). Pattern matching involved the comparison of empirically observed patterns, based on the gathered case study data, with theoretical or predictive models (i.e., in this case, *when* deeper learning occurs and *how* it is fostered).

Logic models of analyses are used to understand complex processes that involve sequential events that become both causes and effects in the chain of activities and become part of the multi-factorial web of inter-related stimuli (Yin, 2018). Employing a logic model, I combined an individual-level logic analysis and an organizational-level logic analysis, because deeper learning took place and was fostered on both the individual level and in the classroom and wider school settings. Deeper learning processes involved powerful learning experiences that worked consequentially and inter-relatedly throughout arcs of learning. Thus, a combined logic model helped to account for the fostering of deeper learning in the MMS, both on the level of the students and on that of the school system, and illuminated the sequential processes involved in the arcs of deep learning for students in the chosen research setting.

In total I analyzed data obtained from over 12.5 hours of audio-recorded interviews and focus groups, seven reflective memos, ten detailed field/classroom observation notes, 21 archival documents obtained from the previous directors of the school, 15 newsletters, and five lesson plans.

Protective Measures for Participants

To help ensure the anonymity of those involved in this research, I employed pseudonyms for the respondents and for the school in focus and stored all electronic files of recordings and transcripts under password protection and in a computer that only I could personally access. All audio files of interviews and focus groups have been deleted. I also abided by established protocols for the protection of the children and minors in the MMS, as well as those required by the IRB during all data collection activities and for the duration of my stay in the MMS (see Appendices C, D, E, and F for the informed consent forms).

CHAPTER 4

FINDINGS

Our educational goals are not only to form students to study, think, and reflect, but we hope to form good hearts, to form students to become people with good morals and good values.

—Louk Chan, Former Faculty Member, MMS Documentary Video Archive Episode 4

This study was intended to explore deeper learning in the MMS, a K-12 school for students from low-income backgrounds in rural Cambodia; to highlight effective approaches being employed to promote deeper learning there; and to note key challenges and opportunities for doing so at the time of this research. My primary question for this study was “What does a deeper-learning school look like in Cambodia today?” Secondary questions were “What approaches to deeper learning are employed there?”, “Why is deep learning deemed important by teachers, administrators, and students of the school?”, and “What challenges and opportunities do they face in promoting deeper learning?”

The quotations at the beginning of this chapter and the succeeding sections were spoken by various members of the founding team of the MMS in the first few years of the school’s operation. Archival videos of the school documented these words which expressed the hopes, dreams, and sense of mission of the school’s pioneering leaders during the school’s infancy stages. This study examined how these hopes have played out by focusing on what students, teachers, and administrators, were saying about their educational experiences at MMS at the time of this research, nearly ten years after the school was established.

The findings of this study indicate that the experiences of students, teachers, and administrators of the MMS in overcoming the overreliance on rote learning practices in Cambodia correspond to several deeper-learning categories employed by global educational reform movements. These include the conceptual frameworks of the NPDL (Fullan et al., 2014),

as well as those of Mehta and Fine (2019). Various practices by which MMS was promoting deeper learning covered all the elements of deeper learning design (i.e., environments, pedagogies, partnerships, and digital technologies; Fullan et al., 2018) and there are 15 in total that I will highlight later in this chapter. These practices, together with the organizational culture, emotional atmosphere, physical environment, and the quality of relationships and sense of community in the school, were activating mastery, identity, creativity, and arcs of deeper learning, as Mehta and Fine (2019) had conceived.

Deeper learning approaches in the MMS strengthened student agency and leadership abilities, cultivated reflexivity, developed critical thinking abilities, increased engagement and collaboration, deepened the sense of personal and collective identities, and inspired positive action to locally address global problems like climate change and growing inequity. These approaches were not disparate, unrelated activities, but were bound together and made effective by a school culture and various aspects of the school ethos that disposed the community to deeper learning. In terms of perceived importance, deeper learning frameworks were valued because they were perceived to be instrumental in transforming the educational experiences of the students, and more importantly, in making meaningful and lasting changes in the trajectories of the lives and psycho-social and emotional development of students. These transformations were seen on the personal, inter-personal, and societal levels.

Various challenges to deeper learning, on the other hand, were both internal and external to the school. External challenges included culturally embedded values that were counter to deeper learning, as well as complications that ensued from the COVID-19 pandemic. These external pressures compounded the internal stresses of a newly established school whose school

population had grown exponentially over the past six years and that still lacked several critical student support structures and was facing several human resource constraints.

In this chapter, I present these findings under the following sections: (a) Beginnings of the MMS; (b) The Learning Environment at MMS; (c) Perceived Importance of Deeper Learning at the MMS; (d) Effective Approaches to Promoting Deeper Learning at the MMS, and (e) Challenges to Deeper Learning at the MMS. Opportunities for promoting deeper learning will be presented in the final chapter, alongside other recommendations. This chapter was organized to directly address the research questions of this study and aligns the findings with deeper learning frameworks in the literature, primarily those of Fullan et al. (2018) and Mehta and Fine (2019).

These findings have been distilled from a substantial amount of data collected for this research. To analyze the case study data, I first used a pattern matching strategy (Trochim, 1989, as cited in Yin, 2018) and compared empirically observed patterns with theoretical or predictive models of when deeper learning occurs and how it is fostered. Pattern matching allowed me to identify potential sub-cases of deeper learning, as well as various elements of deeper learning systems that were present in the MMS. Upon identifying such sub-cases and elements of deeper learning, I used logic models of analyses (Yin, 2018) to examine either the various components of the learning processes present in these sub-cases (e.g., powerful learning experiences, community reinforcement, and arcs of learning) or the individual elements and their causes, effects, and relationships to other determinants of deeper learning in the school.

Simultaneous to pattern matching and applying logic-model analyses, I coded the data (from the interviews, focus groups, archival documents and field noted) based on categories in my conceptual framework. The coding process allowed me to further scrutinize the initially

identified sub-cases and determine whether or not there was substantial evidence from the collected data to support these. Sub-cases or elements initially identified, but which lacked triangulated evidence (i.e., from the various sources) were eventually sifted out, thus ensuring validity of the sub-cases of deeper learning presented here. To focus and hone these findings further, I prioritized and selected sub-cases of deeper learning in the MMS with the strongest correspondence to the patterns in my conceptual framework, as well as elements that were impactful, unique, innovative, and potentially worth replicating in other schools.

As regards the structure of this chapter, the narrative arc is as follows. In the first part of the chapter, I will begin with a brief exposition of the historical impetus and humanitarian motivations that inspired the establishment of the school and its deeper learning foundations. In the second part of the chapter, I will unravel, in length, the deeper-learning landscape of the school, detailing present-day characteristics and describing how it was a place where deeper learning was fostered and valued at the time of the study. The second part of the chapter therefore provides a panoramic view of the MMS. In the third part of the chapter, I will elaborate on *how* deeper learning was promoted, zooming-in and focusing on various approaches employed by the MMS. To do this, I organized some of the data in tabular form (for brevity and to more clearly depict how the various approaches fit into the matrix of deeper learning designs.) I also supplemented this section with vignettes that helped to illustrate the vitality and dynamism of powerful learning experiences that could not be captured by the matrix. Finally, in the last part of this chapter, I expound on the challenges that the MMS community will need to address as a way of looking ahead at how they can carry the deeper learning narrative forward. Apropos to this exploration of deeper learning, this exposition of findings can therefore be likened to an

exploratory journey, whereby one comes to a new destination with some historical knowledge of the place before arriving there, and upon arriving surveys the entire landscape to establish one's bearings, before meeting people, entering community spaces and households, and beginning to understand the dynamics of daily life and relationships of a place. Through encountering people and listening to their stories, one possibly makes new friends, begins to share their concerns, and looks towards the future with them. This chapter employs a similar structure to the narrative arc of such an exploratory journey.

The Beginnings of the Mudita Mission School

Poor children finding happiness, learning from and reverencing their culture, and eventually becoming leaders in their community, region and in this country, so they can share what they have learned and received with the wider community. . . . This is our dream, a dream that many people have been longing for in Cambodia.

—Louk Ignas, Founding Board Member, MMS Documentary Video Archive Episode 2

The founding of the MMS, along with its mission, vision and praxis, has several historical influences. Founders of the school shared that the most significant of these were (a) the desire to help heal and mend the social fabric that was ravaged by the genocidal Khmer Rouge Regime (1975-1979) and the civil wars that ensued in the decades before and after the Khmer Rouge; (b) the primacy of working with the most marginalized members of Khmer society; and (c) the dreams for a better future for the children and youth of Cambodia through helping to improve the quality of education in the country.

The members of the Catholic organization that founded the MMS who first came to Cambodia worked in the refugee camps between Cambodia and Thailand in the early 1980s. Their first wartime mission in the camps was to accompany and serve survivors of landmine explosions and their families and others who were disabled by the conflict. The struggles and suffering that they had witnessed then, as well as the opportunities to provide relief, informal

education, and rehabilitation programs, would later shape the strategic directions of their work in Cambodia, long after the end of the civil war in 1991.

In subsequent decades, members of the mission would also witness how rapid economic development in the country served to benefit only the ruling military elite and their associates, eventually creating an immense wealth disparity between this elite class and the rest of the country (Baudinet, 2018; Strangio, 2014). In 2017, for example, only 25% of the population were found to have safe sources of drinking water and access to quality health care, while the rest of Cambodians (mostly living in rural areas) remained precariously dependent on subsistence farming, which has become ever more vulnerable to frequent flooding and drought exacerbated due to climate change (World Bank Group and the ADB, 2021). On the other extreme, an investigative report from 2016 found that a small group of the elite politicians owned 41 of the top corporations of the country and had an estimated combined net worth of \$1 Billion (Global Witness, 2016).

By the time the founders of MMS discerned the need to establish the school, the promotion of social justice had already become central to the objectives of their organization's work in Cambodia. This value would therefore be infused deeply into the mission of the school from the time of its inception.

Prior to the establishment of MMS, the founders of the school had engaged in various educational projects for Cambodian public schools, investing hundreds of thousands of US dollars collected from various international aid organizations over a span of two decades to help improve access to education by supporting school building construction, children's libraries, and scholarships. By the year 2010, however, these founders had discerned the need to shift

strategies from simply ensuring greater access to education to helping to improve the quality of basic education in the country, given that apparent need. As discussed in detail in the previous chapter, the public school system by that time was plagued by poor achievement, heavy reliance on rote learning, and widespread corruption and inequity. MMS was therefore founded as a concrete and localized response to these problems and was an attempt to create a new education environment in which to deliver quality schooling for students coming from marginalized communities.

The long-term goals of the founders of the MMS went beyond providing its students with a quality education, but also included forming the students to become agents of change themselves who would help to transform the unjust structures in the education system, while also seeking out the best practices in pedagogy and schooling for Cambodian youth that could eventually be shared with educators in the public schools. These motivations significantly influenced the ethos and praxis of deeper learning in the MMS.

Schools that effectively promote deeper learning have a guiding ethic or an ethos that permeates their whole system. This ethos or guiding spirit is made manifest in the classrooms, the school environment, the organizational culture, and in the values of the wider community that houses the school. Values are transmitted via the emerging pedagogies, fostered classroom and school cultures, cultivated relationships, and ways that the schools leverage technology towards inspiring the sought-after depth in the learning and formation of the students. Mehta and Fine (2019) called this ethos the *new grammar* of deeper learning because this underlying spirit structures the very language and thought of this kind of education. Fullan et. al, (2018) called this spirit the *new pedagogies* of deeper learning. Succeeding sections of this chapter will

illustrate how this new grammar of deeper learning was present in the MMS, in particular, through the presence of the components of deeper learning, the elements of deeper learning design, and the deeper learning goals laid out in the conceptual framework of this project (see Chapter 3).

The Learning Environment at MMS

I like studying in the MMS because we have teachers who put their hearts into their work and who come faithfully to teach us.

—Meych, Grade 7 Student, MMS Documentary Video Archive Episode 1

As expounded in Chapter 2, learning environments consist of the physical, virtual, social, and cultural learning spaces of learners. The quality of these spaces are key determinants of student achievement and depth of learning. Studies on classroom cultures have shown that the most effective learning environments are those where teachers and students value autonomy, competence, and relatedness (Ryan & Deci, 2017) and which, additionally, are facilitated by cultivated mindfulness (Brown & Ryan, 2003, as cited in Ryan et al., 2021) and by emotional integration whereby “emotions are neither suppressed nor cognitively altered, but rather openly and receptively attended to” (Ryan et al., 2021, p. 102). Teachers promote such cultures when they intentionally create safe spaces where every individual’s voice and contribution matters and where empathy and deep listening are modelled, and when learning tasks are scaffolded to ensure the self-efficacy of learners (Fullan et al., 2018).

Schools that invest in deeper learning put spaces to innovative use, either by purposeful design and engineering of newer facilities or simply by re-purposing traditional spaces. Either way, what ensures deeper learning is not just the kind of space that is available but, rather, the way spaces are used purposefully to support curious exploration and collaborative work. Deeper

learning spaces are cognizant of student needs: “flexibility for large and small group collaboration; quiet places for reflection and cognition; active areas for investigation, inquiry, communication, and documentation; and rich resources that are transparently accessible” (Fullan et al., 2018, p. 80).

This section contains descriptions of the learning environment at the MMS which match these characteristic patterns from the literature on deeper learning schools. These descriptions are based on participant responses which I validated through classroom and school site observations over the 21 days I was there for this study. School archives also evidenced how founders and school leaders of the MMS purposefully intended to enable these characteristics. This section thereby directly addresses the first research question, “What does a deeper-learning school look like in Cambodia today?”, by focusing on attributes of the organizational culture, emotional atmosphere, physical environment, learners, and learning relationships at the MMS which align with the literature on deeper learning.

Organizational Culture

Three pervading features of the organizational culture of the MMS notably supported deeper learning. These were that (a) the school engaged students on the level of fostering deeply eco-humanistic values (e.g., compassion, care for the environment, and other-centeredness); (b) the school promoted a love and respect for Khmer cultural heritage; and (c) the school furthered creative learning pathways that went beyond books and classrooms. These features were present in the day-to-day operations and life of the MMS—in the ways leaders managed the school, teachers taught and related with students, and students learned and related with others. These

features of the organizational culture were also apparent in the aspirations of the school's founders and were encoded in the school's vision, mission, and educational objective statements.

Fostering Deeply Eco-Humanistic Values

The MMS explicitly engaged students on the level of inculcating eco-humanistic value systems and enabling their praxis. The school's nine core values, as identified in the school website, were these: (a) Persons for Others; (b) Respect for Khmer Culture and Traditions; (c) Academic Competence/Wisdom; (d) Collaboration with Others; (e) Student-centered Learning; (f) Reflective Capacity/ Spirituality; (g) Critical Thinking; (h) Compassion; and (i) Ecology. The school's mission statement was "to form young men and women of *conscience* with *competence*, *compassion*, and *commitment*, who will contribute creatively to the building up of a just and democratic Cambodian society while serving and caring for the poor." The statement contains the formation priorities of the school (also known as the Four Cs). These nine core values and four formation priorities were themes that sustained and propelled powerful learning experiences through protracted arcs of learning, as described by Mehta and Fine (2019). Founders of the school encoded these values in the school's mission, vision, and goal statements. The school administrators, teachers, and students who were participants of this study clearly articulated these values and identified ways the school promoted them. The ways teachers and administrators engaged students on the level of these value systems went beyond the mere mastery of curriculum content or the development of competencies.

Administrators and teachers of the school spoke about the significance of the nine core values taught in the MMS. Louk Son, the school director, shared that, from the very first time new students came to the MMS for their orientation, the four Cs were explained to them. All

students knew of the four Cs, he said, albeit with varying degrees of understanding. Nekru Rotha, who was teaching Morals in the secondary school, explained that these values and formation principles helped to ensure that the formation provided at MMS was more than just academic. She said:

Promoting [the nine core values and the four Cs] is central to our work. . . . Besides strengthening the academic competence of students [we have to help shape] how they are going to live their life. . . . Being a person is not just about the head, but also about the heart. How you love, how you are kind toward others, how you are compassionate to those who really are in need. (Interview)

Principal Lina of the secondary school shared that the focus on these values was, for the students, a noticeably different approach from that taken in the schools they previously attended. She recounted introducing the core values to a group of students by explaining how each of the activities in the school is purposefully aligned with at least one core value. Students responded with questions about the need to explicitly articulate values. She saw this as evidence of MMS's unique identity and approach, noting that in other schools:

[N]o one really says that these are the values that the school would like to promote. . . . So, [here, the students] were like, "Really? That's why we are doing these activities because of these core values?" . . . [Yes,] this is the identity of MMS. And as students of MMS this is how we would like them to present themselves. (Interview)

Students in the focus groups also shared their thoughts on how these shaped their unique identity as MMS students. Thida (G12, F, 18) shared how she thought the school was different from other schools. She also spoke of how the MMS promoted an inclusive spirit and valued the formation of *character* above *academic competence* when she said:

Here, we do not value only those who are smart . . . but even average students . . . whether you are smart or ordinary, whether you are rich or poor, there is no pressure from the school [for us] to perform perfectly. However, becoming persons that would help others, becoming a person that society can rely on, that others can count on, this is much more important than just getting good grades here. I see that kind of spirit in this school.

Reaksmey (G11, F, 16) also shared that the school provided many service opportunities for students. She described a practice in the school whereby older students mentored younger students in preparing to take a national exam. She noted that her participation led to her forming new friendships and learning from the other students, which she felt promoted the school's values. She also added,

We are not just a person for ourselves, I am not just a person for myself. But through this process of helping others, I come to know that I am also alive for others, I am here for others. I have what I have, and can contribute and give what I have, no matter how little, to others in need. (Focus Group)

Archival documents of the school detail how the core values and mission objectives of MMS were purposefully based on elements of Christian humanist tradition which were aligned with the revered values of Humanist Buddhism in present-day Cambodia. Nekru Rotha explained that the four cardinal virtues of Cambodian culture were called the *Brahma Vihara*. Students themselves, like Thida (G12, F, 18), were able to speak of the *Brahma Vihara*:

The school highlights these four values in Cambodian culture: Meta, Karuna, Uphekkha, and Mudita (Loving kindness, compassion, equanimity, joy at the other's happiness). These four values are seen, not just among students but also in the relationships between students and teachers, students and staff, staff and staff. (Focus Group)

As an example, Rithy (G11, M, 18) described the office staff as "very compassionate" in working with families by delaying payment deadlines or exempting fees for families who cannot afford them.

Of all the values prioritized by the school, participants consistently identified *care for the environment* as impactful. Lokru Kon (M, English teacher) and Nekru Chivet (F, Biology teacher) said that this was "the most outstanding core value that the school was promoting", and Nekru Bopha (F, Earth Science teacher) said it was "probably what the school is most known

for.” Nekru Panya (F, Khmer Literature teacher) emphasized the school’s focus on ecology, noting that “We teach them to think about the consequences for younger generations if we will continue to destroy the environment. In Cambodia, very few people pay attention to problems of the environment. Most people don’t really care.”

Students’ responses also strongly validated these statements. When asked to give examples of how the school fosters its core values, Kakada (G11, M, 17) described learning and action related to the core value of ecology, noting that he participated in clean-ups and planting trees, as well as attending lectures on ecology. Senghai (G12, M, 18) noted, “I think that care for the environment here is not only shown in theory but also in practice, inside and outside the school”, and that, compared to other schools in Cambodia, “It is very easy to see” at MMS. Similarly, Tola (G11, F, 17) described the visibility of this core value “not just with words, but also with actions like planting trees” and noted that the school “encourages us to promote these values with others.”

Other than care for the environment, values that participants felt most strongly for were *forming persons for others, compassion, student-centered learning, critical thinking, and respect for Khmer culture*. Although participants spoke mainly about these values, they said that they believed that all the nine core values and the four mission or formation priorities were important. These values formed the arcs of deeper learning which students experienced throughout their stay in the MMS.

Promoting Khmer Cultural Heritage

The second aspect of organizational culture that lent to deeper learning at MMS was the centering on Cambodian or Khmer identity. The MMS promoted respect and love for Khmer

culture in various ways. The school's core values and formation priorities were explicitly aligned with the four cardinal Cambodian virtues—*Meta*, *Karuna*, *Uphika* and *Mudita* (Loving Kindness, Compassion, Equanimity and Joy at the happiness of others.) All instruction is in the *Khmer* language. The use of the *sumpeyah* (the joining of hands, palms together to signify the lotus bud) and *jumreapsuah* (the traditional spoken greeting), which is a respectful way for younger members of the community to greet older members, was a commonplace, everyday practice in the school. The school provided opportunities for students to learn traditional Khmer dance and to learn to play *dontrai* (traditional Khmer orchestral music), something that no other K-12 school in the province offered. During special occasions, students and faculty (including the international volunteers) dressed in traditional Khmer garments and the student orchestra and dance troupe performed traditional pieces and classical dances. During festivities, everyone was free to participate in the folk tradition of *robam vong* or the circle dance, which Khmer youth enjoy. On special holidays such as the Khmer New Year, community members participated in traditional field games, including a local version of the tug-of-war. As such, promoting various elements of the Khmer cultural heritage disposed students toward deeper learning, that is, learning that was personally meaningful (Frăsineanu, 2013) and was related directly to their sense of identity as Khmer youth (Mehta & Fine, 2019).

Students and faculty appreciated the ubiquitous use of these cultural markers in the everyday life of the school, saying that it made them happy that students have a chance to learn and help preserve parts of their culture that many other youth in Cambodia do not have an opportunity to learn about. For example, Phak (G10, M, 16) noted how he has “helped to keep our heritage alive” by participating in and learning about Khmer cultural heritage. He recognized

the importance of learning the traditions and practices of his ancestors, noting that “if we do not practice it, this [heritage] can be lost...and that would be very sad.” Similarly, Tola (G11, F, 17) discussed her appreciation for the school’s attention to cultural heritage, describing how she learned Khmer dance and Cambodian classical music, both of which were new to her.

Nekru Bopha (F, Earth Science Teacher) reflected upon the school’s choice to teach Khmer music and dance, demonstrating the thoughtfulness with which the school made this curricular choice. She thought that the music and dance classes were a good investment and a step in the right direction for improving school programs, and she reflected on her own experience:

Some people think this is a foreigner’s school [because of the school’s name]. In those schools, like some private schools, students are introduced to international cultures, but don’t study Khmer culture. But here, no. We do a lot to let our students know and appreciate Khmer culture and heritage.

[When students first come to our school, they say] “Oh this school also has lessons in traditional Khmer music and dance!” And they are interested to learn. Even I myself think of how I would love to learn this! If I only had the chance . . . I really would also love to learn how to dance but I am too busy. But as for my nephews and nieces who study here, I hope they will be able to learn these things. (Interview)

Elements of Khmer architecture and village life were also deliberately used in the school’s design of the buildings and layout. The MMS school buildings mirrored the single row of high-ceilinged, generously windowed classrooms connected by a semi-open hallway typically seen in Cambodian public schools. School dormitories, where many of the secondary school students stay, were built like traditional Cambodian houses, with an open functional area on the ground floor where cooking, eating, and study are done and with an open-hall bedroom on the second floor. The roofing of most buildings on the campus included dragon-tail flourishes typical of the architecture in Cambodia and Thailand and symbolic of the local belief in the dragon as

guardian of the sky and protector of a place (Westphal, 2010). Louk Sean (the school's founder) explained that, from the planning stages of the school, he and the founding team wanted the students of the MMS to feel at home there and to be rooted in their culture. This was why they ensured that the architects included Khmer elements in the school's design and made the over-all lay-out resemble a Khmer village with a pond that served as the central water reservoir, open fields, and vegetable or flower gardens that lined some of the school buildings and dormitories.

Louk Sean also recounted that the school blessing ceremony that he and his team had organized was reflective of their desire to show respect for Khmer culture. When they were beginning to construct the very first of the buildings on campus, he invited the monks of the local Buddhist temple to come and perform the rite of blessing together with some Catholic priests. The rite included sacred chants of the Buddhist monks followed by Catholic prayers led by Catholic priests and the sprinkling of holy water by both the monks and the priests. After the blessing, the monks, priests, and members of the founding team planted some tree saplings around the campus—symbols of their shared hope for life and flourishing to come out of this new school community. Days after the blessing rite, the Buddhist monks expressed their deep gratitude for being invited to the school blessing and for the opportunity for them to work side by side with Catholic priests, adding that “It was so good for us to come together that way.”

The joint blessing ceremony was important for several reasons. First, inviting the Buddhist monks signaled that the founders of the school, despite being foreigners, were respectful of the local customs. This established bonds of trust between the leaders of the village and the school. Second, the blessing of the Buddhist monks (to whom, according to Cambodian custom, the highest reverence in the social hierarchy is afforded) further deepened the villager's

trust in the MMS. The ritual blessing of the monks was symbolic of their endorsement of and well-wishes for the attainment of the school's educational objectives. This helped to establish the credibility of the school from its beginnings. Third, the ceremony helped to allay fears of the locals who believed that spirits of the land needed to be appeased or revered before any property development could begin, otherwise those spirits could do harm to people in that area in the future. Despite this not being in line with Catholic belief, the school founders were happy to know that the ceremony made the local villagers feel at ease in the school. Lastly, the harmonious cooperation and mutual respect shown between the Buddhist monks and the Catholic priests who were among the founders of the school mirrored the kind of collaboration across differences that the school eventually wanted to impart to its students. All these were the result of the sensitivity to and respect for Cambodian culture that the school's founders displayed.

The MMS's organizational culture ubiquitously promoted elements of Khmer custom and helped students to connect deeply with their collective identity and their sense of national pride. This also motivated students towards mastery and creativity, for example, in the music and dance art forms taught at MMS. As such, the valuing of Khmer Culture was both a prompt and a medium for powerful learning experiences (Mehta & Fine, 2019) that constitute deeper learning. Additionally, centering on Khmer culture increased the perceived trustworthiness of the school for members of the local community. This trust became key to the ability of MMS to nurture and engage learning partnerships, another essential element of deeper learning design (Fullan et al., 2018).

Furthering Learning Beyond Books and Classrooms

Another characteristic of the MMS organizational culture that was clearly aligned with other deeper learning schools was that administrators and teachers encouraged innovative and creative paths towards learning. This involved widening perspectives, inter-cultural exposure, research, resourcefulness in making the most of limited resources, non-traditional or non-formal ways of learning, and learning engagements beyond books and classrooms. In deeper learning schools, the locus of learning extends far beyond the traditional classroom walls to use the various elements of time, space, events, and people as catalysts for enabling culture for learning (Fullan et. al, 2018). Schools, community centers, field sites, and virtual platforms become the spaces where learning takes place (Mehta and Fine, 2019).

Several participants commented on the variety of ways that learning was engaged in creatively in the school and how this made the school very different from most Cambodian public schools. They cited extra-curricular activities, research assignments, field trips, and classroom experimentation coupled with real-life application to be among these practices. Nekru Rotha said,

For example, for history, we organize field trips to historical sites . . . this way the learning goes beyond the text. We bring them to various places indicated in texts, and this is a way to deepen their learning. (Interview)

Lokru Kon related these various activities to one of the school's core values, that of student-centered learning, citing other activities such as group projects, the use of IBL, role playing, and performances. Principal Lina mentioned that several classes used the messaging platform *Telegram* and that teachers shared supplementary notes and materials for their classes through such messaging groups. Nekru Chivet mentioned educational games that she used in her

classes to animate instruction. She highlighted the distinction between knowledge acquisition that is limited to the classroom and the wider application that is characteristic of deeper learning, stating, “Normally, schools are simply places to foster knowledge. . . . Here, however, there are several activities even outside the classroom that make the students think . . . and deepen their understanding of lessons.”

These ways that learning was encouraged beyond books and classrooms also promoted greater ownership of the learning process and fostered active learning among the students. The interaction between what students did inside the classroom and outside, the student’s awareness of learning resources that could be found beyond the school, and the increased student engagement that resulted from this allowed for deeper learning. According to Lokru Kon,

It’s not just the information that teachers give that matters. The students must go out and do research to find additional information. And then we bring what we have learned to the classroom, do some experiments in the classroom. And eventually we let the student see how this applies outside the classroom. If these steps are being practiced, I think our students can learn deeply. (Interview)

Reflecting similar opinions about how and where deeper learning takes place, students highlighted the importance of extra-curricular activities in their education and development. These activities included organized times for games and team cooking competitions, as well as school-wide activities such as debate, a quiz bee, and a talent contest. According to students, these activities were engaging, encouraging, and challenging. Kolab (G10, F, 16) described how such extracurricular activities “stimulated and encouraged [her] to study more, to do more, so I would learn more”, while Reaksmeay (G11, F, 16) highlighted the diversity of topics and social emotional learning that characterized extra-curricular activities:

With books, we often [are limited] to focus on one perspective or idea. But the [quiz bee] contest, [was one activity that yielded] so many topics . . . and gave us courage to go

forward, even after making mistakes. . . . When [I was] young[er], lessons were just things we studied from the books. When we had these [extra-curricular] events, they made me see learning in a different way. Even if some of the events were fun and even funny. . . Like the comical parts of the talent contest, or the English-speaking contest, or the debate or quiz bee. I feel like those all were teaching us lessons. Those who participated really activated their potential and put their skills to work, just as we try to do when we study. (Interview)

Focusing on *soft skills*, Rithy (G11, M, 18) highlighted how learning time management was an outcome of his participation in the talent show:

[B]ecause we were only given 15 minutes for our whole [combined performance] we had to plan the order of our group's presentations and how many minutes to give performers, so as to make sure we did not eat up other grade levels' time. . . . This was a good experience for me . . . making the most of limited time, making sure the division of allotments was fair and good. (Interview)

Some teachers, on the other hand, shared how invaluable life-lessons were imparted through nurturing relationships with students outside of the classroom context. Nekru Panya said, "through compassion, through the help that students extending to friends in need, they learn very valuable lessons. . . . It is more important to experience these, rather than just read about them from books." Other socio-emotional skills that she also saw students learning at MMS included speaking on behalf of the voiceless. She shared that a student approached her one day outside of class with a difficult question. The student said that she was asking this on behalf of others in the class. Reflecting on this, Nekru Panya said,

[S]tudents are not just learning to think, but also learning to play the mediator role, to mediate between those who cannot approach the teachers or still feel shy in approaching teachers. . . . I think that is a good sign. (Interview)

Participants also spoke of the broadening of perspectives and the breaking of boundaries that resulted from innovative learning engagements. Just as students learned about the past through attention to cultural heritage and dance and music classes, students were encouraged to

look to the future through participation in STEM activities, including a competition dedicated to solving a community issue, an online programming workshop, and a STEM exhibit in the town center. Principal Lina recounted her efforts to encourage teachers and students to participate in these activities, not allowing a lack of experience, budget, or confidence to impede the opportunity for students to learn creatively and to showcase their learning in such events. She described, with pride, how students devised various creative solutions to flooding and added that “one student even thought of a roller coaster.” She also expressed amazement at how some student projects (e.g., paper made from banana leaves and home-made hand sanitizers) earned the praise of Ministry of Education officials who visited the STEM exhibit, saw their work, and exclaimed, “We want to support more projects like these!”

In summary, these three elements in the MMS’s organizational culture—engagement on the level of the school’s core values and formation priorities, promoting love for Khmer culture, and a commitment to creative learning engagements beyond books and classrooms—were present in the day-to-day operations and major activities of the school. Administrators, teachers, and students expressed their belief in and appreciation of the importance of these elements and illustrated this with several examples. Archival documents which contained the explicit intentions of the school’s founders and articulations of the school’s guiding principles (e.g., the school’s mission, vision, and learning objectives), as well as several field observations, supported how these elements of an ethos of deeper learning were prevalent in the organizational culture of MMS.

Emotional Atmosphere

Moving on from organizational culture, I shall now focus on the emotional atmosphere in the MMS. Along with organizational culture, physical environment, learner and learning relationship qualities, the emotional atmosphere at MMS significantly impacted the learning environment and experiences of students there. Emotional states that students often experienced colored their views of the school and affected their desire and motivation to be there, to focus on their studies, to trust in the school, and to give themselves generously to the education process.

Participants of the study reported several experiences in MMS that create generally positive feelings towards the school. These positive experiences included joy in community life, fulfillment from engaging in altruistic deeds, a feeling of safety, an at-homeness, a feeling of being with family, solidarity, and respect.

The interviews I conducted, as well as on-site observations, gave evidence that these positive emotions fueled the community spirit at MMS. This community spirit, according to Mehta and Fine (2019), is critical to the reinforcement process that allows powerful lessons to become deeper learning. Various relationships in the school that shaped student's experiences of healthy community life (e.g., among caring classmates, helpful older students, students with similar interests, supportive teachers, and approachable administrators) were the re-occurring locus or enabling conditions for powerful experiences of learning.

Safety and Security

School leaders considered the sense of safety and security in the MMS to be foundational for the flourishing and well-being its members. This sense of safety pertained to the security that a well-planned, properly secured, and relatively hazard-free campus afforded the school

community, but also, and perhaps more importantly, included a sense of emotional or psychological safety. Educational and organizational psychologists have identified attributes of psychological safety to include, safe organizational environments where learners can take interpersonal risks, where there is a non-punitive culture and where trust, respect, relationships and high-quality communication are fostered (Ito et al., 2022). These attributes, in turn, facilitate leader-member or teacher-student relationships, and greater engagement among members of the community (Ito et al., 2022; Mao & Tian, 2022).

According to the school Director, Louk Son, this sense of emotional or psychological safety was essential to the operation of the school. He noted, “Without emotional safety, this cannot be a happy learning community.” Similarly, Louk Bop, the school’s Human Resources (HR) Director, noted the importance of the teachers’ emotional well-being. He described the school’s approach to supervision as “Never disparage or reprimand, always encourage or teach by example” and spoke of his dedication to showing appreciation to teachers and to supporting them in difficult times. As HR Director, Louk Bop endeavored “to be someone who journeys with them [the teachers] in good times as well as in bad.” He further noted that the school’s approach, particularly the commitment to supporting teachers, “allows them [the teachers] to be open-hearted with us.”

Students and teachers of MMS also experienced this sense of safety and security as *the feeling of being with family*. Students repeatedly spoke of feeling at home and feeling like they were with family in the school, of being with warm and welcoming people, and of how this made it easier for them to trust people, especially teachers. Chanda (G11, F, 17) said,

When I come to school, students of other grades with whom we may not be friends are friendly. They say hello. They are welcoming. They greet the teachers respectfully. When

they say hello to me I feel like I am home. This kind of attitude and friendliness encourages me to come to school. It makes me feel like the school is my home. (Focus Group)

The perceived trustworthiness of teachers also contributed to this sense of safety and security in the school. Students felt that teachers were trustworthy and approachable because of how friendly teachers were with students and because of the quantity and quality of time that teachers afforded students. In describing this, Chea (G8, M, 16) said,

Here, teachers spend a lot of time with the students. They are very friendly and approachable, unlike in the public schools where teachers just teach during their period, and they leave the classroom without interaction or conversations with students. (Focus Group)

As such, both the physical, emotional, and psychological safety of community members gave them a sense of security at MMS and facilitated learning there. The experience of belonging, which contributed to this sense of security, also fostered a sense of solidarity.

Solidarity

The feeling of being with family translated not only to safety and security but also to a sense of solidarity for the members of the MMS community. Participants reported many ways that they felt connected to other members of the school, including ways in which they shared each other's joys, hopes and struggles. For students, solidarity meant that stronger-performing students made an extra effort to help those performing poorly in class. Students often did this at MMS with the encouragement of their teachers and out of concern for one another. Romyol (G12, F, 19), for example, shared,

Students who are good at learning can help those a little bit slower in learning. This is very important because it is not about journeying alone but journeying together. The students do not learn for themselves or by themselves. But they are learning for and with others. (Focus Group)

This solidarity is also manifested as a “sticking together”, according to Principal Lina, “through difficult tasks” and when problems or issues arise. This sometimes meant having a special concern for those in difficult situations. According to Devi (G9, F, 14), “if someone is sick or looks like he or she has a problem, we either approach that person or inform the teacher so he or she can reach out to that student.” Nekru Panya also narrated,

Recently, one of the G11 students’ father passed away. The school allowed classmates and those students whose immediate family allowed them to be absent from the class to visit the wake. Other students found time during their recess and lunch breaks to visit the family and express their support by being there for their classmate or friend. (Interview)

Sometimes, solidarity at MMS was also manifested when winners of contests were sensitive to and commiserated with the losers, and the losers, in return, shared in the happiness of the winners. When asked about how he felt as the team captain of the debate group that had won the school-sponsored debate for events week, Rithy (G11, M, 18) said,

I know that our team that won and the other team that lost, but we were all in the end happy. The happiness was because we all endured and worked hard together, and also because we felt for the other team, because even if we had won over them, we know how hard they also worked. I know they tried really hard. And so just because we won, I couldn’t just forget about the other team. I wanted to be in solidarity with them too so they could also celebrate their hard work, so I couldn’t be too happy about just our victory. (Interview)

Some of the respondents used the words *collaboration* and *solidarity* interchangeably and inter-relatedly, but a noteworthy difference between these two concepts is that collaboration is task-oriented, while solidarity is relationship-focused. Solidarity thereby entails greater socio-emotional investment (i.e., empathy, compassion, self-sacrifice, etc.). Additionally, collaboration builds *competency* while solidarity builds *character*. In illustrating how both collaboration and solidarity were operative in MMS, Lokru Kon, shared:

I think before they come into our school, most of the students think only about themselves. They can be selfish. In academics, they would always want to do their best for themselves. So, one student tries very hard so that they can get a good score or they can be on top of the class. And it is normal for them to see that there will be winners and losers. However, when they come here and learn collaboration with others, everyone has to give, has to have the spirit of the team. It's not just only one person but how the team can develop. How the team can grow together. And that is very important, so in this case, the best students would always share the talent and listen to others and also one cannot just outshine the others. Of course, there will always be good students who will do their best and do good in the group, but at the same time, those students also would help pulling up the students who are weak. (Interview)

The sense of solidarity at MMS also marked student-teacher relationships. Students were not afraid to express concern for their teachers. Principal Lina shared that it was not uncommon to hear MMS students say, "Oh, what happened to my teacher? Why is he sad today?" Nekru Bopha, on the other hand, shared that one way she expressed her solidarity with the students was to sit and eat with them at lunch time. In Khmer culture, "*nyam bai chmooy kneah*" or to *eat rice together*, is a powerful symbol of social bonds. Nekru Bopha's doing so resulted in greater trust and openness among the students. According to Nekru Bopha, this "made students feel close to me... trust me. When they have problems, they can approach me and talk to me... So they even open up about family problems."

Louk Bop, Director for Human Resources at MMS, also stressed the importance of building the team spirit among teachers:

Even if we are lacking in resources, we need to find ways to have fun together, even if it's just to go out to have a simple meal together. Even if the school doesn't have a budget for this, sometimes they ask if I can allow this or if I can help cover the expense, and sometimes I do out of my own personal money. I think such a sacrifice is worth it, for the solidarity this builds. All of us are one, and such forms of encouragement are necessary and very important. (Focus Group)

Fullan et. al (2017) cited collaboration as one of the core competencies that deeper learning was able to strengthen and focused on how deeper learning builds team-spirit. The

team-spirit that I observed in MMS, however, went beyond a sense of collaboration or simply being able to work with one another towards a shared goal. It touched on a sense of belonging, a belongingness to one community and of making others feel like they belonged together. There was more a valuing of relationships than of any given tasks. It involved greater self-investment and was thereby indicative of solidarity.

Joy in Community Life

Other than evoking a sense of safety and solidarity, the feeling of being with family in the MMS also evoked joy. Students reported happiness in being able to call classmates, and even other schoolmates whose names they did not know, *bong-poown* (literally translating to “older-younger” but meaning *brothers and sisters* in the Khmer language). Mau (G10 F, 15) said, “As a [school] family, we know how to help each other and listen to each other. . . . That made me very happy when I first started studying here.”

The joy participants experienced at the MMS came from various aspects of community life there, including the quality of daily interactions, special events, and opportunities to learn and serve that the school was giving them. Many of these experiences that evoked joy were not random chance occurrences but, rather, resulted from thoughtful and purposeful planning and management on the part of the school leaders. For example, the school’s vision, cited in Chapter 1 and earlier in this section, was that of

[A] happy learning community within a safe environment where all its members have the courage to discover and choose meaningful life options. It pursues human excellence in learning and teaching while valuing wisdom and spiritual freedom. It aims to develop the capacity of each person to care for oneself, others and society.

During the planning stages of MMS, founders of the school drafted the construction master plans of the school campus based on this vision. MMS founders wanted to build a school with an

environment that made students happy and “teachers feel good after a day’s work.” Toward this end, the founders and architects considered natural lighting, ample space, and ventilation in all areas, including the classrooms, corridors, and workrooms; the projected circulation of human traffic between buildings; the cleanliness and conduciveness of the natural environment; ease in maintenance of the facilities; safety; and an abundance of outdoor gathering and play spaces. Some students reported that, indeed, long before they had enrolled in the school, they would come and visit the campus to play there. After school hours, many school children from nearby who attended other schools were allowed to come and play or hang out with friends at MMS.

At the time of this study, I observed what was called “Events Week”. Towards the end of the academic year, the school conducted various extra-curricular activities lined-up for an entire week when academic classes were called-off. This was held before the winter break, after all the final examinations had been conducted. The mood was festive and celebratory. Some teachers said that it was especially joyful that year because they had not been able to hold such activities since the onset of the COVID-19 pandemic. When asked about these events, Rithy (G11, M, 18) excitedly shared,

Yesterday, the school debate . . . and then, the public speaking in English contest. And then the Quiz Bee. I joined the debate and the Quiz Bee . . . and this morning, I joined the talent contest and the cooking contest. . . . For the talent contest I did behind-the-scenes work, directing the show and was coach for some of the participants. For the cooking contest I joined the team of Grade 11 with four other members. These activities were such a joy to participate in. (Interview)

This happiness from such events was emboldening and empowering for some students. It allowed them to overcome their fear of failure or of performing poorly and afforded them the courage to test their limits. Reaksmeay (G11, F, 16), for example, said,

When they announced these [special] activities, I wanted to participate in them all, but was also not sure because I had never experienced joining such activities like the debate. So, I did not dare to join . . . but after being so happy and seeing others perform, I was more courageous to try things out. . . . Next year, yes, I really want to join the debate. I don't know if I will do well or not, but what is important is I will try to join, so as to test my own abilities. (Interview)

Teachers and students alike also found joy in the MMS through the altruistic values and service activities promoted there. "I like [the core value] 'persons for others' because, as people, we cannot live alone, we have to journey with others. Being able to share oneself with others makes us happy", reported San (G11, F, 15), while Kakada (G11, M, 17) more simply stated, "Helping others makes me happy." Lokru Kon said,

[We are] different from the other schools. . . . We impart this value to the students to become persons for others. . . . In the process of giving and receiving, who is happier? The giver or the receiver? In the process of sharing, of giving, we become happier, and everyone becomes happier. Seeing this also makes me happy. Seeing the students who are able to share whatever resources they have others makes me happy.

Forming "persons for others" is an educational objective that many Catholic schools around the world adopted after the phrase was coined in 1973 by Fr. Pedro Arrupe, SJ, a renowned reformer of Catholic education. The phrase was first used in a reflection on Catholic faith and the social implications of the Catholic Church's teachings, which, for Arrupe, necessitated the promotion of justice and education for justice (Arrupe, 1973). The use of this educational objective in the MMS, however, has interestingly contributed to deeper learning experiences in the school, without having to reference Catholic Church teachings. (Cambodian law forbids the teaching about religion in K-12 institutions). As one of the most appreciated core values of the school, it has served as an arc of deeper learning for students and teachers alike.

The altruistic joy in MMS was inspiring and life-giving for students and was also infectious. Consequently, the outward orientation of forming *persons for others* had students

demonstrating this value beyond the campus walls of the MMS. When Principal Lina told me about a new activity, the Persons for Others Day that was part of the culminating Events Week, she explained:

[E]ach class would make their own project for another village. We have four target villages here. They can choose [from any]. It could be as simple as picking up the rubbish, if they want. Or singing to us, or whatever project that comes into their mind, that would help these villagers smile. . . . We don't have any other goal—just to make them smile.

Joy in the MMS community was furthered not only through big events and special activities, but also in simpler circumstances, for example, in the way regular-day-to-day affairs were evaluated. To illustrate, Louk Sean shared that, at the end of some on-the-job teacher-training activities, participants were taught to quiet down and to look back at the day, asking themselves, “What made you happy today?” Using such a question in other Western settings where he had worked in the past would likely have yielded resistance from training participants, he said, but here the Khmer teachers “rolled right into it” and appreciated this simple way of framing a program evaluation.

Last but not the least, the school's inclusive, joyful spirit was animated by a school dog, Happy, a German Shepherd-Rottweiler mix, whose presence at school events reinforced the atmosphere of joy, light-heartedness, and at-homeness in the school. Students were pleased to see Happy around the school grounds or at the weekly flag ceremony in the multi-purpose hall, when they could greet and play with her.

In summary, the positive emotional atmosphere that participants experienced in the MMS were induced by tight community bonds, well-planned celebratory occasions, meaningful opportunities to be of service, and simple day-to-day encounters, all of which evoked joy and a

sense of safety and solidarity among the members of the community. Notably, these positive emotions did not necessarily create powerful learning experiences on their own. Rather, they strengthened the sense of community which, in turn, reinforced deeper learning.

Physical Environment

Having already discussed organizational culture and the school atmosphere, I move to describing how the physical environment at MMS contributes to deeper learning. The MMS was a green, wooded, quiet, environment-friendly campus where human-centered design approaches were applied to several architectural features and the general lay-out of the school. Human-centered design in schools relates to architectural and engineering design elements that foster harmonious communal life, sustainability, and belongingness (Camocini et al., 2022) and support the mental health, safety and the well-being of the members of the learning community (Latane, 2021).

The MMS campus stood out from the surrounding villages and agricultural areas. Most of the area was a floodplain (cultivated as rice paddies when flood waters receded) and the plains/paddies stretched out to the horizon. Several clusters of 30-40 small houses made up small villages around the school. Amidst these surroundings, the MMS campus rose prominently because of its size, towering rows of trees that lined its inroads, and eight two-story buildings spread out across the expansive 19-hectare property. At the school entryway, there were long rows of 30-foot *chankiri* trees (*Samanea saman*) on the central dividing island and 50-foot *preng kchol* trees (*Eucalyptus globulus*) on both sides of the road. All around the campus, there were areas planted with several different species of native Cambodian hardwood trees, many of which were endangered due to vast logging operations across the country. According to some of the

staff, the first of these trees were planted by a local environmental NGO with whom the school partnered 10 years ago. Many of these endangered trees were now 15 to 20 feet tall. The younger trees were planted by MMS students during special events that promoted environmental care. The areas on campus planted with trees had a micro-climate considerably cooler than immediately surrounding areas that were barren.

Other than showing particular care for the trees on campus, there were several other ways that the school community practiced sustainability, demonstrated high environmental issue awareness, and collective action. Several parts of the school gardens, which included vegetable and fruit trees were divided into plots that were assigned to classes. Each class was responsible for maintaining their section of the school gardens. Around campus, there were banners which reminded students about the school policies on refraining from the use of plastic bags, straws, and one-use plastic items, and about the goal to make the school “plastic-free”. Many community members brought their own re-usable water containers to eliminate the need for paper cups or bottled water. On the day of my walk-through, the school director saw some parents of students, who came to visit their children in the school, bringing a lot of food wrapped in plastic bags. Upon seeing this the school director immediately exclaimed, “Oh no, so much plastic!” Around the school, litter was only in the places near uncollected garbage. Despite this, the general surroundings of the school were clean and litter-free. In most garbage disposal locations, there were three bins, one for recyclables (paper, PET bottles, soda cans, etc.), a second for biodegradables, and a third for trash. The trash was collected by the government-commissioned trucks once a week and is brought to the landfill, while compostable matter was incorporated into the school gardens.

Compared to many other schools in Cambodia, the MMS was considerably greener (with the number of trees and the wide variety grown on its campus). It was also considerably cleaner, with no litter lining its inner roads or scattered in its fields, play areas, and open spaces (a sight that most participants agreed was common in Cambodian roadsides and open spaces). In Cambodian public schools it was common for teachers to ask the students to gather and burn the trash on campus. This was not done in the MMS.

Archival documents point to how founders of the school had intended the school campus to be green, wooded, and environment-friendly in the way it would be run and maintained for reasons related to deeper learning. These reasons were in line with Wergin's (2019) emphasis on valuing settings that lead to deep engagement. Louk Sean (founder and former director of MMS) shared that, when the first architects and engineers of the school asked for five concepts on which to build, the founding team came up with *happy learning community*, *Khmer village*, *silence*, *safety*, and *nature*. Thus, Louk Sean further explained, several distinguishing aspects of the campus, such as Khmer design (explained in previous sections), several gathering spaces, and a few quiet wooded areas ideal for meditation and reflection, came from these guiding points.

Participants in this study shared positive experiences of the MMS campus environment and told of how they thought this benefited them, saying that the environment was highly conducive to learning, made the school attractive, and helped keep the community happy. Among the features that they specifically mentioned they liked about the school were the fresh air, the closeness to the river, the many trees and the shade these provided, the clean water reservoir they could look out to from the canteen, and the buildings that had more than ample space in between them and provided good natural ventilation. For Dara (G9, M, 15), these were

what made the environment “very conducive for studies”. Chivy (G10, F, 16) said that these things gave her “the feeling of wanting to come here and study”. Phak (G10, M, 16) confessed, “Even before I applied here, my father would bring me once or twice a week and I would play in the playground. . . . I really liked coming here because of the surroundings.” Nekru Bopha added that, “because of the cleanliness here, I am happy, other teachers are happy, and the students themselves are pleased. . . . This helps the students focus on studying hard in the school.” The physical environment also, therefore, contributed to the joyful emotional atmosphere of the school which was discussed in the previous section.

Other teachers noted how the school’s physical environment positively distinguished the MMS from other schools in the area. Lokru Kon explained, “With the environment . . . and the cleanliness here, it is already obvious that we are so different from the others schools.” Nekru Rotha similarly said, “our school leads the students to do various activities like road cleaning, planting trees, community clean-ups . . . that is unlike all the other schools I have seen.”

Alongside the campus having been clean, green, wooded, and evoking a closeness to nature and care for ecology, a few of the administrators also made explicit mention of the silence of the place that supported focused, uninterrupted learning. Nekru Chivet shared:

In terms of policies that relate to school environment or classroom cultures, I would say that the quiet that the school maintains . . . this atmosphere of quiet and calm, is unlike other schools. For example, most public schools are built near the national roads and the pagodas. So there is normally a lot of noise that can disturb the students. Here, when we come here, the surrounding is very quiet and conducive to studies. It is not chaotic. When they start studying and classes start, students enter the classroom and they don’t loiter around. (Interview)

Other than the benefits already enumerated, the various attributes of the physical environment at MMS impacted community members by widening perspectives and broadening

the horizon of possibilities beyond anthropocentric means of relating with the natural environment. As recounted by several participants, the cleanliness, care for nature, and mindfulness of how human's impact ecology in the school presented an alternative mode of relating with nature, significantly different from what most students were used to in their previous schools and even in most of their homes. Many students of the MMS came from low-income Cambodian households in which it was common to find un-swept plastic trash around the yard or on the ground floor of the home. As Thida (G12, F, 18) shared, "I am used to surroundings that are a mess or are so disorganized. But when I come to this school, our teachers help raise my awareness [on the importance of cleanliness around me]." This heightened awareness resulted in creative tensions that raised questions of both alternative possibilities (i.e., making participants think, "*What if we changed the way we live?*") and ethical living ("Are we living the way that we *should?* ") Both these lines of questioning led students to engage in deeper learning.

Additionally, the way school leaders managed the physical environment at MMS modelled for students what was *doable* in terms of addressing environmental problems. As Rithy (G11, M, 18) shared, "reducing water usage, carbon emissions, or other toxic substances . . . the [school] really helped me understand and think about what I can do." This *doability* kept students willing to engage in seeking creative solutions to address a global problem such as the climate crisis, despite its complexity and enormity. Without doability, advocacy or educational campaigns fail to gain traction when students are met with hopelessness or a sense of the futility of propositions that fall beyond their contributive capacity, thus the importance of this aspect that was present in the MMS programs.

Finally, the closeness to nature that the physical environment at MMS afforded the community enabled several psycho-emotional aspects of learning. Among those that came to play in this study were wonder, creative vitality, love, and passion. There were signs of these in the way study participants paused, spoke more tenderly or excitedly, or brightened up when reflecting about the physical environment of the school. Louk Son also shared that, in one seminar he conducted on sustainable living for students, one insight that some students gained was that the school was not only teaching them to take care of the environment but, foremost, to feel a love for nature (e.g., the trees, the river, and the ponds in the school). This love, the students said, was eventually what would allow them to work to protect and conserve the earth and its resources. “I learned that [in order] not to be controlled by human greed, first I need to learn to love what I have” said one student, according to Louk Son. Towards the end of that seminar, students synthesized their learning by saying, “We care for what we love. We do not care for what we do not love.”

In summary, the MMS campus, having been a clean, wooded, environment-friendly, and quiet place, allowed students to feel close to, at home with, and a care for nature. Intentional use of human-centered design facilitated the sense of sustainability, a positive quality of life, collective responsibility, and harmonious communal living in the school. Study participants made mention of these attributes as qualities that made the school conducive to learning and which inspired deep reflection both on the impacts of the natural physical environment on their own lives and persons and on how their own lives impacted the environment, as well.

Learner Attributes

Other than organizational culture, the emotional atmosphere, and the physical environment at MMS, learner attributes were also a primary determinant of a deeper learning environment, primarily because of the social nature of the learning process. Long before new students of the MMS were introduced to formal academic classes in the school, they were already learning about their peers and colleagues, getting acquainted with their teachers and classmates, and were consciously or unconsciously imbibing dispositions and attitudes that their fellow learners exuded.

Participants of this study manifested various qualities that helped to foster deeper learning for themselves and others in the school. Students who participated in this study exhibited mastery of varied subject matter, the ability to communicate clearly, expressiveness, criticality, open-mindedness, and signs of meta-learning. Teachers exhibited a drive to constantly improve their craft based on experimentation and student feedback, an openness to conversion or shifts in behavior and ways of thinking, a commitment to understanding their students and their contexts deeply, and an openness to receiving difficult questions. By exhibiting these deeper learning attributes (Frășineanu, 2013; Mehta & Fine 2019, Wergin, 2019) teachers, who themselves were deep learners, were in a better position to foster deep learning among the students by the way they taught, interacted with, and modelled these deeper learning traits to students.

Mastery and Self-possession

According to Mehta and Fine (2019), mastery, when related to identity and creativity, is an integral component of deeper learning. Students of MMS who demonstrated mastery of

particular subject matter were articulate and noticeably confident in the way they could explain particular topics or respond to questions in detail. Students who possessed these skills were starkly different from those who spoke only in general statements but could not give concrete examples. Devi (G9, F, 14) for example, despite being the youngest in her focus group, enumerated the greatest number of ways that Khmer culture was promoted at MMS:

Relating to respect for Khmer culture and traditions. . . I found this in our ways of greeting one another. The way the younger greet and respect the elderly. . . And then, in big celebrations, for example the closing ceremonies or opening ceremonies, we never fail to include traditional Khmer dance and traditional music, like the *rochiyapru* (folk dances), *Saravan* dances, even popular dances like *robam vong* during big celebrations. During the New Year we play games like the tug-of-war, very popular for New year's village gatherings in the provinces. During the celebrations, we have these games incorporated into the activities, besides dancing and music. (Focus Group)

Rithy (G11, M, 18) exhibited a firm grasp of environmental topics recently learned from a two-week seminar and a passion when speaking about them:

I would like to add something on ecology because I think this is very important. There was this 7-week program for on-line learning. Teacher S conducted this in cooperation with a school from Korea. . . . I was touched because just focusing on ecology, we spent two weeks. The program helped us understand about doable things- the reduction of water use, reducing emissions of carbon in the air or some other toxic substances that pollute the air. The program really helped me understand and think about what I can do . . . to recycle plastic bottles, to reduce water and electricity consumption. These were taught in the program. Also, we learned more about renewable energy like solar power . . . They dedicated seven whole weeks for all this. (Focus Group)

Principal Lina also shared that she consistently received positive feedback evidencing mastery, highly developed communication skills, and self-possession. Recently, teachers who accompanied the students sent to a STEM regional activity said that the MMS students were highly articulate, very confident, and collaborated closely during the presentation. Principal Lina also shared about initial worries and uncertainty when MMS initiated the student leadership program which allowed students to elect their class representative, and which allowed the

representatives of all classes to act as a student council that would help monitor discipline and would conduct regular activities such as the flag ceremony on assigned days of the week. These fears were eventually allayed when the program proved successful. One indicator of this success was how well student leaders were listened to and well respected by the younger class levels, especially after seeing their exceptional communication skills and self-possession. She narrated,

[O]lder student [leader representatives] go to the Grade 8 classrooms [and make announcements or meet students on behalf of teachers]; you wouldn't expect that in other countries, right? But when they come [and do that here], some of the [younger] students even call them *lokru* (teacher) or *bong* (respectful address for older sibling). They come and sit together and listen to whatever the older students are talking about. (Interview)

Interestingly, students who had the most impressive display of mastery (e.g., Rithy, Devi, and other student leaders mentioned by the teachers) were also the students who simultaneously displayed passion and self-investment (i.e., signs of how mastery connected to identity), as well as an orientation towards action, participation, and further exploration (i.e., manifested links to creativity.) While this study lacks conclusive data, these observations might suggest that mastery and ownership of learning are preconditions for meaningful creativity and innovation. On a broader level, this centering of mastery as the foundation for developing identity and creativity was manifest in two ways in MMS's policies that guided their approaches to deeper learning: firstly, MMS worked with, but was not constrained by, the prescribed curriculum and material of the Cambodian MoEYS; secondly, MMS teachers were not encouraged to completely eradicate traditional pedagogies like drills and the chanting of memorized material but, rather, were encouraged to supplement and complement these with more student-centered approaches. These were conscious choices that were made by the founders of the school and which were being practiced by teachers at the time of this study. While the centrality of mastery is not in question,

whether or not it is a precondition to building identity and creativity, or whether these are simultaneously developed, is beyond the scope of this study's findings.

Nonetheless, precision, clarity, confidence, and mastery marked the communication skills of several students in the FGDs and those among the student leader representatives. These students were looked up to and emulated by other students, thus creating a culture of striving for mastery and articulation, a culture that opened pathways to deeper learning.

Expressiveness and Criticality

The expressiveness and critical capacity of the students were also signs of creativity and contributed to the deeper learning environment at the MMS. Several students in the focus groups were unafraid to express their feelings, dissenting opinions, and uncertainty in explaining phenomena and to consider plausible rival explanations of popular opinions. These were indicators not only of good communication skills and mastery but of deep critical thinking and reflective judgment— skills seen among learners of more advanced levels of cognitive development (King & Kitchener, 2004). These were also indicators of constructive outlooks on disorientation or creative tension, which according to (Wergin, 2019) are critical to deeper learning.

Principal Lina shared that the students of MMS had a reputation of being more expressive than students from the public schools. After some regional gatherings of students, she received feedback from local government officials about how students of MMS were better at asking questions and more confident about coming up to the microphone and speaking their thoughts when time was given for such participation. She also noticed that MMS students were able to tell some teachers openly, “Teacher, you taught us very well today” or “Oh, I like what you did

today”. Such expressiveness, according to Principal Lina, was “very rare” among Cambodian youth and was something students said they would never be able to do in public schools.

Some students in the focus groups were open to sharing things they found disagreeable in the way the school was being run. This was a healthy sign of how engaged the students at MMS were and how comfortable they were in speaking critical views. Kolab (G10, F, 16), for example, shared,

What I don't like now is how they impose some disciplinary measures without asking or listening to the students. For example, when they decided on the closure of school gate because of incidents of some students from the schools who come to cause trouble. . . . Since there is a guard by the gate . . . they did not need to close the gates [and make it difficult for us to come in and out of the school]. . . . Our students are in uniform. It is easy to see when we come in or out because of our uniforms. But the rule was imposed and implemented without considering the student's voice or ideas. This made me feel bad about it. (Focus Group)

Reaksmey (G11, F, 16) spoke about another concern involving the school's dormitory community:

Most of the time when students from outside cause problems, it is easier for teachers to blame the students from the inside (from the school dorms) than those living outside, even if the latter were the ones responsible for the wrongdoing. Sometimes these things affect those of us living in the dormitory. “Why target us with such accusations? Why not get to the facts?” Regarding the judgments, I think they should not be biased like that. This makes us discouraged. We feel discouraged and sometimes want to give up on studies, but I am thankful I am able to share about these things. Some of my friends in the dorm for example are not able to share or express themselves this way. (Focus Group)

Several students, on the other hand, spoke about how they were bothered by the increasing problem of trash on campus. Their comments indicated how they had wrestled with this for some time and were trying to understand the problem. Kakada (G11, M, 17) shared,

Before there was no litter . . . now I see there is more trash . . . When things changed like this I was discouraged. So I started joking with some friends, asking, “Where is this problem coming from?” This really changes things. (Focus Group)

In another focus group, Devi (G9, F, 14) said,

This year, the school is a little bit different. I don't know but maybe it's because the number of students is increasing. With this it is more difficult to control, to communicate [policies]. Some students throw trash around and use all those plastics. . . . The trash is not segregated—biodegradable and non-biodegradable. The amount of trash is increasing. The cause of this might . . . also might be the sellers who are using more plastic bags and other food wrapped in plastic more than before.

Reflecting on the value of criticality, Kakada (G11, M, 17) came to believe that developing critical thinking was a result of deeper learning that was more important than student performance or the status that formal education afforded students:

For me, critical thinking is the best thing that can help us in life to see and judge properly. Without critical thinking, even if we are sent to school, there is no growth. With critical thinking this expands because we don't just receive and accept the teaching as it is, but we are able to question things. In the reality also, if people who get well educated and attain status but lack critical thinking, they have nothing, compared to persons who did not receive a proper education, but who have critical minds and who are able to ask the important questions and judge properly with their critical minds. Although they didn't study, they are more valuable than those who study but do not develop criticality. (Focus Group)

The expressiveness and criticality of students of students at MMS were attributes that enhanced the learning environment at MMS while also indicating the student's responsiveness to deeper learning approaches.

Openness to Experimentation, Improvement, and Paradigm Shifts

Openness to experimentation and the drive for improvement, on the other hand, were attributes of MMS teachers that impacted the learning environment and facilitated deeper learning there. This openness was evidenced by how teachers practiced exploratory, evaluative, and self-correcting approaches to classroom instruction and was mainly driven by the school's praxis-oriented pedagogical paradigm. This paradigm, to be discussed in further detail in the succeeding section, grounds classroom instruction on student context and evaluating the

effectiveness of lessons. At MMS, teachers are required to prepare and submit their lessons plans based on this paradigm and are periodically appraised based on its application. In this regard, school policy effectively supported the openness to experimentation and the drive for improvement among teachers at MMS.

In the first years of the school, when school leaders recruited teachers from the public schools to teach at MMS, many of these teachers welcomed the room for experimentation and creativity which this paradigm allowed them to work with in the school. Louk Sean narrated:

They would come and go as part-time teachers. But they liked coming because they could experiment with things that they could not do in their own classrooms in the public schools. They could experiment and learn. And try new things and be creative. That was one thing I noticed. Normally, public school teachers are browbeaten and broken, but here they were blossoming because of the creativity that they were allowed. (Interview)

Louk Sean's observations corroborated findings of previous studies on Cambodian schools, several of which are discussed in detail in Chapter 2. These studies described standard practices in Cambodian public schools to be teacher-centered, stand-and-deliver approaches that were mainly oriented toward rote-learning (e.g., chants and drills, copy-memorization, and the fostering of *parrotting* skills). These observations, however, also have suggested that there were underlying cultural and systemic factors present in the public schools that did not allow public school teachers to digress from these traditional methods, even if they wanted to. For example, the expectation to conform and not to stray from tradition, which ranks highly among Cambodian values, may have prevented public school teachers from experimentation and from trying more creative approaches to teaching.

Nekru Rotha, who herself was a part-time teacher in the public schools, shared her experience of being able to improvise in her teaching of Morals at MMS, adapting lessons to

make them more personally meaningful to the students. She referred to her method as her “personal style” which left a lot of room for discussing the student’s “personal life context . . . their family and community.” She compared this to how teaching was done in public schools, which she recounted as simply delivering and summarizing new content based on the prescribed textbook, with little or no room for discussion of everyday realities that students encountered. Her openness to digressing from the norm allowed greater student engagement and deeper reception of lessons. These lessons were more easily relatable to their identity and to the moral dilemmas they encountered in their own lives.

The openness of teachers to creativity, experimentation, and constant improvement had at least a two-fold impact on learning at MMS. It helped to ensure effective instruction, while also modelling the creative learning process to students, thus encouraging deeper learning.

On a deeper level, this openness to experimentation manifested not only in classroom instruction but in the readiness to try out new behavior, as well—a trait that evidenced greater personal investment and being comfortable with vulnerability, despite the age and stature of some teachers. Lokru Kon shared what he had observed about some part-time teachers whom the school hired, when they demonstrated personal investment, humility, and dedication to improving their craft for the sake of the students. These teachers decided to purchase their own laptops to facilitate their own learning, even if the school had laptops which they could use for their classes. He said,

In our public schools, teachers do not use technology so much. . . . [Here,] they are encouraged to use this. Some teachers find it hard, but they try their best . . . and learn from these new things so they can help the students learn more. . . . During the workshop on curriculum development . . . some teachers spent their own money to buy a laptop and to use for curriculum design. Some did not know how to use laptops and approached

those who did. And . . . I really observed that they tried their best to learn new things and new ways of doing things. (Interview)

Nekru Bopha shared how she has had to change her way of relating to students through her years of teaching, and how she noticed considerable differences in the responsiveness of students to her ways:

When I taught in the kindergarten, I was very docile and lenient. But when I came to teach here in the high school, I became very strict with the students. I knew this was sometimes necessary, but upon reflecting, I saw that sort of makes the students afraid of me and they distance themselves from me. So maybe I was too strict, I said. This year, after reflecting on this, I said I [would try] to be a little bit discerning, understanding, and considerate. So if there are cases that I can just forgive, I will forgive. If there are cases when I need to instruct them more I would do so . . . after making this adjustment, a lot of students flocked to my office and came to me! There are now always students coming to me! They feel that I am approachable and . . . joke that when I walk around the school, “Am I leading a procession?” (Interview)

Nekru Bopha also shared her own experience of ecological conversion that resulted from her joining MMS and coming in close contact with the leaders of the school who worked to foster care for the environment. When she first came to the school, she shared that, despite being an Earth Science teacher, she had “no interest in ecology” and even questioned “Why do we have to be concerned about this?” But, through her encounters with other teachers in the school and the various ways she saw care for the environment enacted there, her ways of thinking and acting shifted dramatically, such that she shared:

The ecology program in our school doesn’t only affect the students, but it also affects the teachers to be aware and to love the environment. And this doesn’t only affect us in the school, but others around us in the community as well, and even around the world. This is something I love deeply. (Interview)

These shifts in behavior and ways of thinking, as well as the openness of the older teachers to learning to adapt to technological advances, again signaled traits of life-long learners

who effectively modeled these traits for future life-long learners that deeper learning schools tried to form.

Meta-Learning

Finally, there were also some signs of *meta-learning* at MMS whereby teachers and students themselves became more aware of learning processes which were helpful and effective for them. According to Biggs (1987) and Watkins and Regmi (1996), this was the most important factor that contributed to deeper learning among the student populations they studied.

Based on the teacher's use of the praxis-oriented paradigm of the school, mentioned earlier and to be discussed further in the succeeding sections, teachers were not only encouraged by the school administrators to experiment but were guided in evaluating various combinations of pedagogies that they were using. Frequent and periodic appraisal and feedback, as well as close mentoring relationships with the principal and with the academic coordinator, as well as with the Human Resources Director, ensured meta-learning among the teachers.

Meta-learning was evident in the way some students among this study's participants were able to name and explain the experiences that helped them to learn more deeply and retain lessons for the longer term. For example, Chivy (G10, F, 16) shared:

In the classroom we have all these activities that allow us to collaborate with others. I remember at the end of one academic year, we divided into groups in the class. We then had to work on some sports activities. Through those activities, we learned strong collaboration. We didn't discriminate, even if we came from different classes. Those good at this or that would contribute to the team. Normally, those who are good help the weak. They weren't boastful, but were just present and they helped the slower weaker ones so they could catch up. . . . There were also various activities that the school implemented like public speaking and debate so that we could be able to work together and exchange ideas, share learning. (Focus Group)

Students were keenly aware of how helpful the student-centered approaches used at the MMS were for them. These approaches included group discussions, research, and group presentations which students reported most of their teachers employed. In reflecting on these, Devi (G9, F, 14) shared:

I love these and appreciate that our school has these kinds of activities. . . . [It] makes me feel more confident, when I am able to stand in front of a crowd, in public, that I am able to deliver my findings, my research. I feel good about it.

Engagement in conversation, answering and throwing back questions [and exploring answers] . . . these interactions deepen our learning experiences. These help me to learn more deeply. In relation to critical thinking, students develop their skill in asking questions and responding. This also helps us to communicate with others better. (Focus Group)

Some students were also able to name negative aspects of their experience that were counter-productive to learning. For example, Dara (15, M, G9) described group discussions in which his fellow students tried to avoid working with students who were “slower or weaker” and only joined groups with the “good students.” Dara noted, “this causes discrimination in our school.”

In another example of student reflection and meta-learning, Phak (G10, M, 16) discussed behaviors not helpful to his process, noting that some students had trouble discerning when it was time to focus and when it was acceptable to play around. Phak had a firm understanding that “study time is for studies and play time is for play.” He said, “The teacher would tell us that there is a time for everything and that we always needed to think of how what we did affected others.” He was also sensitive to the teachers’ feelings of disappointment when students did not listen to this advice.

This sensitivity to what was helpful for them and for their classmates was a sign of *meta-cognition* or *meta-learning* and was a result of the well-developed reflective capacities of the students. One way that this reflective capacity was enhanced in the school was through mindfulness meditation practices that were done altogether by students of the secondary school at least three times a week, on Monday, Friday, and Saturday mornings. This approach (to be discussed in further detail in the succeeding section on deeper learning approaches) was a regular exercise in looking back at events and lessons of days past and facilitated reflection on “What was helpful?” or “What was not?”

All in all, some of the attributes of deep learners that participants of this study manifested were mastery and strong communication skills, expressiveness and criticality, meta-learning, and creative openness to experimentation, improvement, new behavior, and shifts in ways of thinking. These traits impacted the learning environment at MMS and were determinants of how deeper learning took place there.

Relationships at the MMS

Finally, another important aspect of the learning environment at the MMS was the quality of relationships within the community. Along with the organizational culture, emotional atmosphere, physical environment, and learner attributes discussed in previous sections, the quality of relationships at MMS impacted deeper learning. Mutual respect, a commitment to deeply getting to know the students, and an openness to difficult questions marked these relationships.

Mutual, Reciprocated Respect

Rarely mentioned in the literature but highly instrumental for deeper learning in this case study was how relationships in MMS were marked with a deep form of *respect*. This enabled deeper learning by enabling positive learning dispositions, enhancing self-confidence, and strengthening the community spirit. According to students and faculty, mutual, reciprocated respect was crucial to maintaining a positive learning atmosphere at the MMS. For example, Kakada, (G11, M, 17) confidently shared that “people respect one another and have good relations here”, while Chea (G8, M, 16) said, “the school encourages us to respect each and every teacher, no matter how long they have been teaching. Every teacher deserves respect from the students.” This disposition helped strengthen the community spirit and made the school conducive to deeper learning.

In line with Cambodian culture, there were various ways that respect was shown in the MMS. One’s manner of speech, asking questions, non-verbal greetings, dress, conducting oneself inside and outside classroom settings, and even expressing one’s feelings all communicate varying degrees of respect to others in the community. Respectfulness was also related to the school’s other humanistic values. Principal Lina cited, for example that,

[W]henever we promote that “you need to queue up” when buying food, how we come to the office, how we say hello. All these are simple acts of *persons for others*. The moment you knock, that means you don’t want to disturb them first. You want to respect their time . . . all these things we say and promote to the students. (Interview)

Of all the ways that respect was practiced at MMS, teacher participants of this study most often cited the traditional Khmer greeting (the *sumpeyah*). When using this greeting, a greeter (often the younger person in the relationship) joins one’s palms together as in a prayer position, raises the joined hands to have the index fingers touch one’s chin or nose (depending on whether

the person being greeted is an elder or a monk), then makes a slight bow while reciting the verbal greeting *joom-riep-suah nekru/lokru*. (Literally translating to *meet-prepared-to-ask Ms. teacher/Mr. teacher*, or simply meaning “Greetings, teacher!” in the Khmer language). In talking about the significance of this greeting, Nekru Bopha and Nekru Panya both mentioned the importance of teachers responding to this gesture of respect with an acknowledgement of the greeting, for teachers to show respect to the students in return. To illustrate this, Nekru Panya shared:

A recent example is of a student who walked by the teacher without greeting her, so the teacher felt like the student was being rude. That upset the teachers and during the flag ceremony, the teacher went up on stage, talked about this case and requested that the students should greet the teachers, even though that teacher might not be their instructor. One of the students, right after the flag ceremony approached me and asked questions. The student, who was a class representative, approached me and said “Teacher, I have something to ask. And please don’t be angry or offended, ok?” And the student asked “If the student greets the teacher and the teacher doesn’t reply, just passes the student by, that is also not appropriate right? Because it makes us feel we are nothing.” So, while the students greet the teachers, the teachers should also reply in a way to show they really acknowledge the greeting of the students. (Interview)

Nekru Panya’s assertion about the importance of reciprocating respect was notable, given that Khmer culture says little of elders having to show respect to children in return. The hierarchical nature of Khmer society emphasizes the reverence that younger people must show elders but does not require that respect also be shown to younger members of a social group. This often contributes to a voicelessness or diminished sense of personal value of the young in Cambodian society. For example, at table, children will be rebuked or, worse, punished for speaking up or out of turn because they are generally expected to stay quiet throughout a meal. Nekru Panya’s observation as regards the need to reciprocate respect to further deeper learning

was bold, counter-cultural, and indicative of the kind of teacher-student relationships encouraged at the MMS.

Nekru Rotha and Nekru Bopha also shared similar thoughts about how they worked to gain the respect of students by becoming closer to them. Nekru Bopha's approach was modeled upon that of the previous director, whom she said, "was approachable" and "had an open attitude." From this director, Nekru Bopha adopted the approach of asking students how they were and what they needed. This approach stood in contrast to traditional authoritarian approaches that teachers and leaders in Cambodian communities normally take. As Nekru Bopha noted, "Being scary is different from being respectable. Respect out of fear is different from respect out of closeness."

After Nekru Rotha shared a similar approach to relating with students, I asked whether or not she thought that this kind of familiarity with the students could lead to students losing respect for their teachers. Her response was direct:

No. I don't think so. In fact, when we become closer to students, students stop being afraid of us and can trust us more. Sometimes, this will make them feel like we are their mothers or older sisters. And this way, it is better in terms of how we can guide their learning in school. I see that the more we become open, the more we become closer to students, the students also feel at ease approaching us, asking for advice, asking for help. (Interview)

Again, given cultural considerations, it was noteworthy that teachers at the MMS were cognizant of ways that they could gain the deeper respect of students. Whereas Khmer culture presumes *respect* as that which must be afforded to teachers since they are elders and wisdom figures of the community, teachers in a deeper-learning setting like the MMS were more mindful of the varying degrees in which this respect was made present and the nuances involved with teachers having to *earn* the kind of respect that fostered student learning.

The negative consequences of unreciprocated respect included diminished motivation, reduced student achievement, and the risk of the breakdown of the relationship with the teacher and the school. Along these lines, Nekru Bopha related,

If a student doesn't have a good relationship with the teacher and loses respect for the teacher, they also lose interest in their studies. Because if they don't like the teacher, they end up not liking the subject. It affects their learning.

These kinds of problems regarding teacher-student relationships . . . if they arise and are not addressed, can lead to a collapse (in the relationship). And this can demotivate students. Some students share this with their parents. . . . If the parent is open, they come and ask about this and we can help them. But there are parents who just decide to pull out their children without consulting us, and this becomes another problem. (Interview)

For other participants, *respect* related directly to equal and just treatment, regardless of personal circumstance. For students such as Chivy (G10, F, 16), Dara (15, M, G9), Kolab (G10, F, 16) , and Atet (G8, M, 16), and for teachers such as Nekru Bopha, and Nekru Panya, respecting others meant not discriminating or looking down on others because of their appearance or background, being open to collaborating with them, and befriending them, even if they came from life situations different from one's own. Kolab shared that she liked studying at the MMS because she experienced this kind of respect here. She said that, at MMS, "We don't discriminate, regardless of height, color, social status, family status. We treat everyone equally; we play with each other and befriend each other." Nekru Panya further illustrated that most students in the school were able to work and live well together:

There are students here who are from poor families, there are students who are from rich families. We encourage the students not to discriminate, but to treat everyone equally, without discriminating based on social status, financial status or other things. Because our students come from different backgrounds, some from this province, that province, some from the border areas. (Interview)

She also added that, “Of course . . . there are a few who still discriminate against their schoolmates. But . . . teachers [meet students where they are] and really explain to them the effects of that kind of attitude or discrimination.” Principal Lina also explained how the COVID lockdowns seem to have made it more difficult to teach this. She said that students did not seem as respectful to one another after returning from the lockdowns, but that the faculty continued to work hard to encourage this in the school.

Regardless of difficulties encountered in the school community after returning from the lockdowns, respect continued to play a vital role in the relationships at MMS. These relationships enabled deeper learning there by enabling positive learning dispositions, enhancing self-confidence, and strengthening the community spirit.

Commitment to Getting to Know Students Deeply

Over and above respect, teachers and administrators of MMS related with students by exhibiting a strong commitment to learning about them and from them. This commitment manifested in how teachers at MMS centered student voice, tried to observe student behavior keenly in their classes, leveraged relationships and open communication lines with the parents, considered student feedback, and thought deeply about the backgrounds and family situations of students in order to adjust lessons and classroom instruction to address student needs.

The school’s policy which adopted student-centered learning as one of its nine core values helped to ensure this. When speaking about how faculty and staff of the school tried to practice student-centered learning, Louk Son highlighted the importance of asking the opinion of students and listening to their feedback:

We try to listen to the voice of students. Sometimes [other teachers] say “*Oh Louk, chap jewah cone suh mleh*” (You believe in the students too quickly!) But for me I want to

respect their ideas and opinions. . . . So for the appraisal of teachers . . . I ask their opinions . . . for the recruitment of teachers [we do the same] . . . and what they see is very good and helpful. (Interview)

Nekru Bopha emphasized the need to be observant, knowing how to read the signs of behavior and responsiveness of students, as this was what allowed teachers to connect more deeply with the students:

The process of teaching also requires that we observe. We cannot just say “ok I go to the classroom and then I teach and then after teaching hours I get out.” While teaching we also have to observe. And based on the natural attitude of the students, if the students used to be playful all of a sudden becomes sad . . . and on the other hand a student who is usually quiet becomes hyper-active, you have to really read, read behavior, between the lines. . . . If you are able to understand the attitude and behavior of the students, when you talk with them you can do so heart-to-heart. You will be able to relate with them and understand them better than if you don’t really know them personally. (Interview)

Nekru Bopha shared about how part of her responsibility as head teacher was to collect student feedback and to share this, even with the older part-time teachers who may sometimes not be too open to this. Emphasizing the importance of feedback, she said,

Normally when I get feedback from students and I try to listen to what they are saying or not saying. I collect their feedback as much as I can and I then ask help from those more senior than me in the institution, for example, the school director, or other office staff, to call the attention of the teachers involved and share the feedback. Not to directly say it to the person, but in general, to share the feedback from the students so as to raise the awareness of teachers. (Interview)

Nekru Bopha also talked about her negative experiences with teachers who did not really make an effort to understand their students and their circumstances:

[Sometimes] students sleep in class, [and some teachers] don’t ask “Why . . .?” Some students sleep not because they want to sleep but because our students are farmers, and they go to help their parents with farming. Sometimes they are absent from school for 2-3 days and they go to help them, sometimes to spray pesticides. This can be intoxicating, and sometimes affects the students, making them unable to sleep at night or weak. And so when they come to school, they are sleepy. Sometimes teachers, rather than trying to understand the circumstances of the students, they just get angry.

It is very important to speak with the students. . . . Of course, with 30 students in one classroom you cannot really get to know all of them closely. But at least in 2-3 months you get to know around 15 of them well. And [when there are] changes in their attitudes and behavior, teachers will be able to notice these immediately. (Interview)

Nekru Panya relatedly said, “Especially when there is a problem with students, we really listen to the students. We have to listen to them and also listen to their reasons, their stories, before we make any judgements.” Similarly, Nekru Rotha emphasized the importance of gaining the trust of students and of being able to play the role of second parent or older sister, so that students would be more open to her about their real concerns and problems. This allowed her to get to know them better, to provide them counsel when they sought for it, and to adjust her lessons in her Morality class so they would address the needs of the students.

As such, this commitment of teachers to get to know their students fostered deeper learning at the MMS by ensuring that lessons were personally meaningful and made a difference in the lives of students. This cultivated the spirit of life-long learning for the teachers as well.

Openness to difficult questions

Finally, another significant quality of the relationships at MMS which I observed in the study, along with reciprocated respect and the commitment to learning about the students, was an openness to difficult questions. This openness to raising difficult questions, as well as to receiving them and wrestling with them, helped to foster criticality of the students. This was present in how students related with teachers, and vice-versa, both inside and outside of the classroom.

During lectures that I observed, it was noteworthy to see how teachers entertained student’s questions, even if these were raised in the middle of a lecture. When teachers asked students questions, students raised their hands and waited for the teacher to call on them before

they spoke. When students had questions or sought clarifications, however, they spoke freely (without having to raise their hand or to wait for the teacher to call on them), as if in conversation with the teacher. Teachers, in turn, immediately responded to their questions or promised to do so later on in the class, without seeming like they minded interruptions to their train of thought. This was the case for the classes of Nekru Rotha, Lokru Kon, Nekru Panya, and Principal Kristina (who also taught English). The ease with which students could ask questions seemed to make it easier for them to do so.

Some of the difficult questions asked by students involved sensitive topics which other teachers would rather have avoided, but which the teacher-participants of this study skillfully navigated through. Some of these questions involved same-sex marriage, for example, or the case of teachers in the school not returning common courtesies to students (as earlier cited), or that of teachers who did not abide by school policies.

In Nekru Rotha's Grade 11 morality class, the topic for the day was marriage. She started out the discussion by posing questions such as these:

What problems could arise when a man and women do not get married under the proper circumstances? What if two people loved each other but they did not get married? What things would arise from this situation and from Khmer society? If two people love each other, why is it important to get married following the requirements of the law?
(Interview)

Eventually, she also asked. "What is marriage? Can a marriage be between two people of the same sex?" To which most students answered, "no", but some students answered, "yes". At first, Nekru Rotha simply affirmed the students who said no. But shortly after that, one student asked, "But, Nekru, in other countries, marriage between the same sex is already allowed, right?" Nekru Rotha then explained that, yes, in fact there were some countries such as the United States

and some countries in Europe where this was allowed. She also said that perhaps in Cambodia things might change and that we might see this here, as well, in the future. But she concluded by saying that “for now, we know that the law still does not allow it.” While this may have seemed like an easy answer to a difficult question, the fact that Nekru Rotha raised the topic of same-sex marriage and hinted at the possibility of change in Cambodia was, in and of itself, courageous. Furthermore, that she attached no negative judgements against the laws of other countries also signaled a level of open-mindedness.

Nekru Bopha shared another example, that of students raising the question about teachers not following school policies. She said that she has often been asked by students about why students are not allowed to use plastic bags or to purchase water in plastic (disposable) bottles, when they see teachers in the school doing this themselves. To this, she confessed,

Sometimes I don't know what to say, because it is true. So, I told [them that I would] remind that teacher about this. . . . Teaching is also not about words alone, but about the integrity of our actions. . . . We teach about the environment and also have to demonstrate our love for the environment. (Interview)

On such occasions, Nekru Bopha said, she has learned to turn those encounters into learning moments. Instead of focusing on the inconsistency, she has learned to ask students to reflect on the negative effects of their own actions, regardless of the actions of others.

On this topic, Nekru Panya told a student,

What is important is we have done our part and did our best and that's it. You cannot let the goodness you have in yourself be destroyed because of somebody else. . . . So, what you think is right that you want to do, you just keep doing it, even without a response from the other. . . . After I said that, the student responded “Oh I understand now. I will share this with my classmates.” (Interview)

Such cases of difficult questions raised by students regarding moral issues, inconsistencies that elders and moral leaders in the school exhibited, and moments when they

themselves felt disrespected by these leaders signaled a more nuanced understanding and sensitivity to complex subject matters. Relationships marked by the openness and willingness to wrestle with them, on both the students' and teacher's ends, as well as with reciprocated respect and the commitment to learning about and from one another, was reflective of the concept of psychological safety (Ito et al., 2022) as discussed in the earlier section on the emotional atmosphere of the school, and clearly fostered deeper learning at MMS.

In summary, there were various ways that the learning environment at MMS enabled deeper learning. Organizational culture, emotional atmosphere, the physical environment, and learner attributes were all determinants of the student experience there. In particular, fostering humanistic values, Khmer culture, and creative learning; cultivating a sense of security, solidarity, and joy; purposefully maintaining a green, earth friendly environment; and having models of mastery, self-possession, expressiveness, criticality, openness to experimentation and behavioral shifts, and meta-learning were all environmental factors that enabled deeper learning.

Perceived Importance of Deeper Learning

By opening this school, we are opening the door for bringing in change, change in the hearts of people, change in society, change in Cambodia.

—Louk Rak, MMS Board Member, MMS Documentary Video Archive Episode 1

Deeper learning frameworks are increasingly valued by educators globally as an effective means to developing the competencies necessary to meaningfully engage 21st century realities and to enable students to contribute to the progress and development of their persons, families, communities, and societies. In Cambodia, these 21st century realities include complex socio-political dynamics that diminish individual freedoms, the worsening climate crises and environmental degradation, susceptibility to the proliferation of fake news, and rapid economic change exacerbating poverty, inequality, and social injustice. Compounding the difficulties of

preparing students to face such complex realities are the deficiencies of the Cambodian schooling system, with its longstanding structural and culturally rooted issues. These deficiencies result in poor academic achievement (e.g., as evidenced by PISA-D results mentioned in earlier sections) and poor global competitiveness of the majority of Cambodian students. Although the literature has highlighted several layers of the importance of deeper learning in relation to these concerns, no study has been done on the perception of members of school communities in Cambodia on the significance of deeper learning in their own contexts. It is important to identify these local perspectives in order to present viable models for deeper learning to other Cambodian schools, both private and public.

This section directly addresses the research question “Why is deep learning deemed important by teachers, administrators, and students of the MMS?” Participants of the study identified various perspectives on the importance of deeper learning, many of which converged with Fullan et al.’s (2018) 6Cs of critical thinking, creativity, collaboration, communication skills, character, and citizenship. A more prevalent theme that emerged from the participants’ responses to why they deemed deeper learning to be important, however, was the transformative nature of deeper learning. Deeper learning frameworks were instrumental not only to transforming the educational experiences of the students but, more importantly, in making meaningful and lasting changes in the trajectories of the lives and psycho-social and emotional development of students. These transformations were seen on the personal, inter-personal, and societal levels. On the personal level, deeper learning frameworks were seen to help students dream of and work for a more promising future, both in terms of career and personal development—something that is taken for granted in developed countries, but which is still a

remarkable accomplishment in the Cambodian context, where obtaining a basic education does not guarantee any future successes. These frameworks were also deemed effective in enabling an openness to shifts in long-standing beliefs and behavior. On the inter-personal level, deeper learning was deemed transformative because of how it developed collaborative skills and encouraged listening across difference. Finally, on the societal level, deeper learning was seen to facilitate the transmission of positive social values and the enabling of responsible citizenship and critical engagement.

Personal Transformations

Learning that Activated Dreams, Potentials and Striving Towards Life Goals

Foremost, participants appreciated deeper learning frameworks for enabling students to fulfill their aspirational goals of living good lives and becoming good people. According to participants, deeper learning improved the quality of education for Cambodian students in ways that better prepared them for future life-challenges, increased global competitiveness, developed critical thinking and communication skills (two of the 6Cs of Fullan et al.'s, 2018 deeper learning competencies mentioned in the conceptual framework of this study.) Additionally, participants also credited deeper learning frameworks for the MMS's effectiveness in inspiring students to dream of and to work towards greater possibilities for their future (a form of creativity) and in forming students of upright moral character (the third and fourth of the 6Cs to which this first category alone already relates.)

According to archival documents of the MMS, one significant data point that served as an impetus for members of the Catholic order that founded this school was that the majority of the youth with whom they worked "no longer knew how to dream." When asked about what they

wanted to become in the future, many of the Cambodian children and youth had few or no choices for aspirational goals to speak of. Most of these children and youth came from agricultural communities which practiced subsistence rice farming. The bleak prospect of continuing to live in the poverty of farming life made them averse to staying in this line of livelihood, but their limited exposure to various possibilities due to their being confined to rural village life also opened a narrow purview of the future. Thus, the school's motto, "Dare to dream of a brighter future."

Administrators and teachers such as Louk Bop, Louk Son, Principal Lina, Nekru Panya, and Nekru Bopha verbalized their shared hope that, no matter where the students ended up, they would be successful and would make positive contributions to society. Interestingly, more than just *success in life*, students who participated in this study spoke more of how deeper learning in MMS was helping them become people of upright and balanced moral character. For example, Romyol (G12, F, 19) shared:

In our daily life we receive a lot of things—suggestions, ideas, proposals . . . I think that when we possess critical thinking, we know how to evaluate . . . the words of others . . . Some try to impart ideologies . . . We need to think deeper and understand what is true, what is false, what is right and what wrong, what is good and bad, what is good and what is evil. And we try to avoid all those negative things so that we can carry out our lives peacefully and meaningfully. (Focus Group)

Like Romyol (G12, F, 19), other participants in the study related deeper learning to holistic and integral human development, saying that the school's means of promoting deeper learning through the core values of the school was a well-rounded formation that produced what, according to Mr. Bop, was a "fullness of qualities" (*krop leakana*) or a fulfillment of human potential among the students. While the school was able to nurture virtues like compassion and care for others and for the environment, participants shared that deeper learning processes

allowed students to balance these virtues with wisdom and intelligence that guided decision making. Based on its mission statement, the school sought to promote “the integral development of the whole person.” Earlier articulations of this mission statement affirmed that this integral development consists of “intellectual, moral, artistic and sportive” aspects, relating to Louk Bop’s “*krop leakana*” or fullness of attributes.

Louk Son highlighted how the school’s view of the purpose of education was other-oriented and considered the greater good and not just the good of each individual student. He said:

[We believe] the aim of education is to form persons for others . . . [the students] are actually the ones who will build up this society . . . but in order to do that, they need education, because education means not only transferring knowledge . . . but to be able to blossom in their potential . . . the values, are all for that purpose. We want them to have academic competence, wisdom, collaboration with others, reflective capacity, critical thinking, compassion, care for environment—all these values actually are for them to be able to cultivate their capacity and also to help them to be capable of what they are up to. (Interview)

Several participants mentioned ways that deeper learning facilitates the balance between affective, psycho-social, intellectual, moral, and practical sensibilities of students. Thida (G12, F, 18), for example, said:

wisdom is a way of thinking [more deeply about] reality. Normally, some students who are already very competent are good at academics, but if we help them to gain this kind of deeper thinking from life experience, it will also help form them more holistically. (Focus Group)

Bunroeun (G12, M, 18) spoke of how deeper learning fostered critical thinking and balanced judgements. He also raised the tension between justice and mercy which, for him, deeper learning was able to reconcile. He cited a recent disciplinary case in the MMS and explained how he saw a deeper wisdom behind the school’s process of deciding on the case. The

student in this case was caught taking money from another student's belongings. Instead of immediately sanctioning the student, school administrators paid careful attention to the process of calling for the student and allowing him to speak his side, mindful that the student may have needed help. According to Bunroeun, "This also fostered critical thinking in the school community because we didn't all just get angry and then demand to expel the student." He also added,

It is not just about following our emotions or feelings but judging according to facts. Is it alright to condemn this person or just forgive? When you possess critical thinking, you analyze more deeply into the reality, and you put reasons and facts together. So that you will be able to analyze and judge if in one particular situation such as forgiving someone who has wronged you or punishing the person so he can learn. (Focus Group)

Similarly, Lokru Kon highlighted that character building through promoting deeper learning was not simply cultivating altruism or selflessness, but fostering discernment that guides actions and brings forth genuine goodness. He said:

this is not [about] giving without thinking. Our students are able to distinguish when they are to give and when not to give. For example, when they see a beggar on the street, a boy begging on the street . . . they ask, will giving help him grow or will giving diminish his dignity as a human person? So, this gives our students an opportunity to think also in being persons for others. (Interview)

In summary, MMS community members appreciated how deeper learning frameworks were transformative in enabling students to become successful, well-rounded individuals of upright moral character.

Learning that Enabled Conversions and Behavioral Shifts

Deeper learning frameworks were also transformative on the personal level by enabling openness to listen across difference, conversion of belief, and shifts in deeply seated behavioral patterns. Participants of the study narrated their own experiences of changing their minds about

previously held beliefs and consequently altering behavior or ways of proceeding because of the various practices and values promoted by the MMS. Deeper learning allowed individuals to challenge deep-seated culturally implanted practices and opened alternative paths forward for students and teachers of the MMS. These were seen by participants in their attitudes towards environmental concern, pedagogy, study habits, honesty and cheating, and other-centeredness.

Dara (G9, M, 15) and Atet (G8, M, 16) similarly shared about how different they were before coming to study in MMS, and how they previously did not take school or studies seriously. Dara said,

Before I came to this school, I was not really a clever student. But after coming here I found myself being drawn to studies more. I did better than before. I started to learn what to do and what not to do . . . What I have to improve with myself and also how to do things better, all these I am learning in this school. (Focus Group)

Louk Son narrated the story of a Grade 12 student of Buddhist background who had studied in MMS for several years. She was formerly reserved and shy and did not participate much in school activities. But last year, after she listened intently to a presentation on the life and example of the Saint Matthias (pseudonym), she approached the school director and shared openly about how she was “touched by how he lived as a person for others.” During the school’s foundation day, she volunteered to speak boldly in front of the whole school community and parents of the school about what moved her about Saint Matthias. She concluded her talk by saying, “We as MMS students need to be very proud, and we need to really help other people.”

Rithy (G11, M, 18) spoke of how academic competence is taken more seriously in the MMS than in other schools through the policy against cheating and of how this has helped reshape his own attitude towards cheating:

the school promotes this through stricter rules . . . students cannot cheat in the exams. This is unlike other schools where I studied, where normally students are allowed to cheat, to look at their books or the papers of their classmates, during exams. But here students are not allowed to do this. So, this value reminds students that they have to learn [to work] harder, give their best, and also they have to improve themselves and rely on themselves, not by relying on cheating. (Focus Group)

Principal Lina shared that in the beginning, when they were teaching students the importance of honesty and not cheating in exams, there was much resistance. Students were used to being allowed to cheat by their teachers when they were studying in other schools. But eventually, Principal Lina said, it was the students who would come to report when cheating happened in their classes. The repeated message that helped the students to change the way they looked at cheating was this:

In this school we promote honesty . . . in taking exams [you] should exercise honesty. So, it's not about the grades. It's about how honestly you answered your test paper and trusted yourself that you can do it. And then how much effort you made to answer the exams. (Interview)

Principal Lina also spoke of how pleased she was with the progress of some teachers in practicing more student-centered learning approaches through making use of group discussions and student-presentations in class and of how the transformation of their teaching styles is a source of hope.

So, all the notes, all the lessons, all the important ideas from the lesson came from the students. And then the teacher just pointed [these] out at the end. See, this is teaching! . . . I was so happy because it is very different from the first time I saw most of these teachers . . . all of them were just like standing in front and talking and [saying] whatever the book [contained]. . . . [This makes me think] I can still go on watching all these appraisals! Because one teacher, two teachers will still come [and show they are learning] and give you hope. That there can be change in the teaching paradigm here in Cambodia. (Interview)

Nekru Bopha shared her own ecological conversion experience which she ascribes to the MMS and her experience working with leaders of the school:

[B]efore I worked here, I had no interest in ecology . . . I studied Earth Science, but we never cared about those things. We never discussed about how use of this or that affected the environment in this or that way. But when I came here and the school talked about ecology and care for environment. [I came to reflect on] Why do we have to be concerned about this? Why do we need to pay attention to this? This was new to me. The school raised my awareness about how important it is for our well-being... Before it was ok for me to carry a plastic bag, going here and there because it was convenient. It was normal. But now, whenever I have to carry a plastic bag, I feel awkward, strange, like, “Why am I using this this?” (Interview)

These conversions or shifts in behavioral and cognitive patterns which were manifestations of personal transformations were credited by the participants in this study to the various deeper learning approaches in the MMS. Listening across difference was seen to effect transformation on the individual level. Consequently, it also resulted in transformations on the inter-personal level, impacting relationships and the ability of participants to collaborate effectively with others in the MMS.

Inter-Personal Transformations

Learning That Empowered Through Collaboration

On the inter-personal level, deeper learning frameworks effectively developed the collaborative skills (often referred to in Cambodia as *soft skills*) of the students. Also, participants of this study referred to how most Cambodian youth are lacking in the soft skills necessary for teamwork, conflict resolution, and networking, but said that the MMS’s emphasis on collaboration as one of its nine core values was seen to address this need directly. Learning to work well with others allowed students to accomplish more and to be accountable to one-another, emboldened actions, and encouraged both cooperation across difference and learning to see that each individual had something to contribute to the group. Collaborative work also taught

students to stick together through tough times and to stand up for each other in the face of challenges and struggles that threaten other members of the group.

These ways that collaboration was strengthened at MMS were a result of the frequent use of student-centered learning strategies in assigning work, research or discussions in groups, and community building strategies such as organizing special school-wide events which allowed students to work in teams (e.g., sportsfests, cook-outs, debates, and outreach programs.) Additionally, the consultative approaches that school leaders took in addressing school problems also significantly modelled for MMS students the meaning and power of collaboration.

An example of how school leaders modelled consultative approaches was shared by Romyol (G12, F, 19) when she cited the recent case of flooding on the main access road leading to the school and how this was addressed. She said,

The director didn't just decide by himself that he wants to do this or wants to do that . . . What he did was to ask us, "What can be done about the road leading to our school in order to make it easier for students to get here?" . . . Eventually we got an improved road because [he used] the feedback to organize the repair [in cooperation with the PTA].
(Focus Group)

Relatedly, Reaksmey (G11, F, 16) commented, "In collaborating with others, we can perform better than when we do things on our own."

Collaborative learning moments were also opportunities to learn about equity and justice. A common theme that recurred in many of the participant's responses regarding collaboration at the MMS was about *the strong helping the weak*. Participants who mentioned this highlighted how the better-performing students also gained from the process of helping, by increasing virtue, learning, and receiving the greater psychic rewards of team success versus individual success. As Lokru Kon pointed out, "It's not just [about the individual] person but how the team can develop,

how the team can grow together.” This is also where *listening across difference* impacted team dynamics. Several participants mentioned that collaborative approaches at MMS taught students to work with each other despite their differences and not to discriminate against their classmates who might be of different socio-economic status, intellectual ability, background, or upbringing.

All these virtues related to collaboration counter individualistic mindsets which participants believed were prevalent and continued to find deep roots in Cambodian society. Some participants were mindful of the deep woundedness caused by the genocidal Khmer Rouge regime of the 1970s, which outwardly promoted the commune as the ideal and basic unit of shared life but which left people no choice but to lie, steal, and betray their kin in order to survive, and how this continued to shape present-day individualism. This has been further enhanced by a rapidly growing free-market economy which has fostered a culture that rewards the most driven and most cunning, and further strengthened the socially destructive survival-of-the-fittest narrative. Against such a backdrop, teaching collaboration “is part of the work of healing”, according to Louk Son. He added that, as educators, they “want to participate in the journey of healing and reconciliation in Cambodia . . . education is one of the big [opportunities] that we can join this mission of healing and reconciliation.”

In summary, members of the MMS community valued the collaborative nature of deeper learning frameworks because they fostered necessary soft skills, empowered community members to do more than if they acted alone, and enabled healing and social-reconstruction. In these ways, deeper learning was valued for enabling transformations on the inter-personal level.

Societal Transformations

Learning That Facilitated the Transmission of Positive Social Values (Communication)

Moving on to the societal level of transformation to which deeper learning contributes, deeper learning approaches enabled students to transmit positive values and assert transformative influence in social circles beyond the classrooms and school grounds. Habits, practices, and values learned in the school were shared at home, among neighbors, with friends from other schools, and even in chance encounters in marketplaces and public spheres. MMS teachers shared examples of the ways students would challenge or question what other family members practiced (or did not practice) in terms of environmental concerns, road courtesy and traffic rules, wearing required protective gear (helmets), hygienic practices (e.g., hand washing and cleanliness of the home), and respecting elders. Nekru Bopha, for example, told of this experience:

My niece studies here in the pre-school. Normally the teacher tells them plastic is not good, affects our health, the environment, etc. When my mother once came back from the market, my niece asked her, “Grandma, why are you using all these plastic bags?” . . . My mother will be 70 this year. My niece is three or four years old. And she tells her grandmother, “It is not good for our well-being, our environment and our health!” (Interview)

A more positive example was shared by Lokru Kon regarding practicing respect for elders and how this was passed on by students of the MMS:

Greeting elders respectfully it is not an ingrained habit for most Cambodian youth. But in our school I see our students really respecting the elderly (teachers, staff) as a standard practice . . . This [is] part of their normal behavior . . . When they go back to their family, they would also tell their younger siblings, or even the parents. They are different. They are doing something very positive. And this can influence the bigger society gradually. (Interview)

In the main provincial market, which was six kilometers away from MMS and at the center of the town, some vendors often observed students from all the schools in the area as they came and went for their daily dealings. One was once overheard by MMS teachers saying, “These students in the yellow shirts [the MMS uniform] are always very respectful. That school they go to teaches them well.” The local Catholic parish, where an increasing number of the MMS students have been voluntarily attending Sunday services, has seen a resurgence of the community’s vitality and practice of the faith. Many of the MMS students served at Mass (the Catholic prayer service) and helped with the outreach activities of the parish. Last Easter, one of the largest number of baptisms was conducted in the parish, with most of the newly baptized coming from MMS. When asked for their reasons of wanting to be baptized, many students said they had learned to love the values taught to them at the MMS and were thus attracted to the Catholic Church. The monks of the nearby Buddhist temple, on the other hand, also thought highly of the school. During my immersion at the school, I visited the temple and was met at the outside of the temple by one of the women who was an elder of their council. When she found out that I was staying at the MMS, she immediately said, “Oh, please tell us when there is an outreach program again. The last time, they helped so many people in this part of town. I know of a few other poor families that need help too and will tell them the next time the school will be bringing their offerings.”

Through modelling values of compassion, being persons for others, respect for elders, care for the environment, and other positive behaviors that were developed through deeper learning approaches in the MMS, students and teachers were inspiring change and hope in social circles beyond the school’s confines. These positive and sometimes counter-cultural behaviors

were helping to re-shape not only the relationships of students and their families but also the wider communities to which the students and the school belonged.

Learning that Enabled Citizenship and Critical Engagement

Finally, deeper learning approaches were catalytic to social transformation by forming individuals to be agents of social change with a deep sense of responsible citizenship, critical engagement, and concern for the common good. Responsible citizenship entailed the active and meaningful participation of MMS community members in processes that strengthened Khmer society and the global community. Critical engagement involved reflection and discernment processes that ensured that responses to community concerns were carefully and intelligently considered. And the concern for the common good (another hallmark of Catholic Social teaching, on which many of the MMS values are based) was manifest as the desire to work for the collective benefit and welfare not only of MMS students or the school, but of the wider human family and toward global ecology.

At the MMS, the school's core educational objectives were explicitly oriented towards the common good. Teachers and students themselves demonstrated ownership of this orientation in various ways, Chivy (G10, F, 16), for example, said:

We come to the school to be able to study, participate, and acquire knowledge. Through acquiring knowledge, sharpening our abilities and academic competence, we will be able to use this in the future for ourselves and for others and for our society at large. (Focus Group)

Similarly, Nekru Rotha and Nekru Panya explained that developing academic competence alone—without fostering humanistic values of compassion or concern for the environment and without the criticality that guides moral sensibilities or the development of conscience—will do Cambodian society greater harm than good. In saying so, Nekru Panya

briefly alluded to Cambodia's genocidal past which was engineered by the Khmer Rouge regime, many of whose leaders were educated in European universities.

Participants of the study also exhibited an awareness of grave social concerns deeply affecting Cambodian society today and valued how deeper learning helped to raise this awareness and to catalyze collective action to address these concerns. Among the social concerns mentioned by teachers were the environmental and climate crises, the proliferation of fake news and people easily swayed by opinions or disinformation, growing wealth disparities, social inequity, and corruption.

Several participants, including Louk Son, Lokru Kon, Nekru Bopha Nehru Panya, Thida (G12, F, 18), Rithy (G11, M, 18), and Devi (G9, F, 14) spoke of their serious concern over problems relating to ecology and the environmental degradation in Cambodia, problems ranging from plastic pollution to extreme weather related to climate change and forest depletion and to the general apathy of most Cambodians towards these concerns. Nekru Panya noted that "Globally, the impact of the environmental degradation and global warming is alarming. Everyone needs to pay attention to these issues. Our school is providing students chances to reflect and to take action."

Nekru Panya also mentioned the longstanding problem of corruption in government and explained how, even if the subject she taught was Khmer Literature (and not Civics or Morals), she tried to incorporate issues like this in her lessons. She emphasized how allowing students to reflect more deeply on social realities in a way that connected them to their personal experiences and daily life was necessary for forming their sense of responsibility and commitment to making a difference. She shared:

Sometimes we have lessons on corruption. I present the reading, and then I pose various questions to reflect on the reading. And then I ask, “What would they personally do in the kind of situation when corruption arises? How does corruption affect the person and also society at large? I throw all these kinds of questions for the students to reflect on, to help them go back to their context, to their daily life. And of course, our students who have parents working in the government offices, know [these things well] and they are able to share, to respond. They are able to give [deeper] insight into the problem.

This lesson, as well as other social issues, are in the government prescribed textbooks and so are being taught in our school. But if we are to teach these in a way that there will be deep learning, we need to pose questions that are relevant to their context and that will make them really think, reflect. If we do this, we see good results. But if we simply use the questions that are in the book, and we just have them answer these and do not deepen the discussion with them, we will not see our core values surface. (Interview)

Some teachers such as Nekru Bopha, Lokru Kon, and Nekru Rotha, as well as students such as Rithy (G11, M, 18), mentioned how, as a rapidly developing country, Cambodia was seeing growing problems of inequality. A free-market driven economy which rewards those with great drive and the propensity to reach for success and to preserve self-interest at all costs downplays the role of altruistic virtues like compassion and community in social development. However, because of the deeper learning experienced at MMS, students embraced altruistic and community-centered values. As Nekru Bopha commented, the students “learn a lot about caring and helping others, being compassionate, and not discriminating against others.” Nekru Bopha acknowledged that these values were becoming more counter-cultural as Cambodia developed. She saw “both the process of instilling these values in students, as well as their social application” as processes that required deeper learning on the part of students and educators alike.

Leveraging a similar critique of contemporary cultural movements that veer away from critical and informed participation, Nekru Panya discussed the problem of fake news and, specifically, the loss of reflection and listening in society. She said:

Nowadays, people don't reflect much about what they are doing . . . especially regarding what is happening in society. Most people tend to listen to one side of the story, without considering the other. After hearing one side of the story they just believe, or they just follow. They don't really reflect and ask . . . "What are the reasons behind this?" And given our wide accessibility to social media nowadays, young people really, can be easily victimized. . . . So, the capacity to reflect would help students to overcome that kind of ignorance, and help people to think which is wrong and which is right? Which is good and which is bad? (Interview)

Deeper learning approaches in MMS created pathways for greater awareness of social issues, critical engagement, and an ownership of collective responsibility to promote the common good. In summary, MMS community members valued deeper learning approaches because they saw their transformative effects on the individual, inter-personal, and societal levels. These approaches activated the potential of students, allowing them to dream and to work hard for their dreams and to strive to have better lives and to become better people. Shifts in cognitive and deep-seated behavioral patterns ensued from deeper learning. Deeper learning facilitated healing and empowerment through collaboration. Deeper healing facilitated social transformation through the transmission of positive social values and the enabling of responsible citizenship and critical engagement. While these perspectives on the importance of deeper learning aligned directly with Fullan et al.'s (2018) 6Cs or the deeper learning goals of forming character, citizenship, critical thinking, communication, creativity, and collaboration, they more clearly emphasized the *transformative* power of deeper learning. Deeper learning was not only forming and equipping students with necessary competencies but was transforming the lives and life trajectories of MMS community members and of wider circles in Cambodian society.

Having laid out the characteristics of the MMS and why deeper learning is valued there, I tried, in the last two sections to paint a picture of the landscape of a deeper learning school, both in terms of the physical environment as well as the psycho-emotional and cultural landscape

involving the contours of value systems and drivers of deeper learning. Moving on from this panoramic approach, I will now proceed to zoom-in on particular practices that promoted deeper learning at MMS.

Approaches to Promoting Deeper Learning in the MMS

Our program is different in that our teachers are trained to help provide extra care to the students. We do a lot of group activities, we do a lot of class work, and we also offer a lot of music and visual arts activities... and we try not to stick to rote learning . . . many of the learning in the schools here is still just rote-learning, which is not very good.

—Louk Lee, Former Director, MMS Documentary Video Archive Episode 3

Education innovators are constantly in search of ways of improving educational approaches that enhance the quality of learning. Given the continuously evolving nature of cultures, societies, and learning contexts, school leaders cannot afford to stop adapting. They must unceasingly work to make learning processes relevant and engaging for students. Only by adapting can schools continue to provide culturally sensitive and authentically transformative education.

Adapting to changes in educational contexts does not necessarily involve new approaches but can also entail appropriately refining and applying traditional pedagogies in ways that are more effective for current generations of students in particular school contexts. Several of the approaches to deeper learning outlined in this section are such cases. For example, organizing school debates, providing traditional dance and music lessons, or developing the leadership skills of a student council representative group may be commonplace in school contexts of other countries but were unheard of in most Cambodian public schools and were thus considered novel and innovative by this case study. These approaches may not have been new, but their application to this context was innovative.

Innovation is especially challenging for school educators in areas which have less access to human, financial, technological, and technical resources. Schools in such under-resourced areas are also usually under increased pressures driven by higher student populations, higher teacher-student and classroom-student ratios, and other factors related to the poverty and inequity such communities face. Highlighting approaches that are working for school communities in such contexts can bring hope, inspire innovation, and provide guidance for other educational leaders facing similar challenges.

The MMS used various innovative approaches towards promoting deeper learning. There are 15 that I will be highlighting in this section, each of which falls under a specific category of Fullan et al.'s (2018) four Elements of Deeper Learning Design, in line with the conceptual framework of this research. These four elements of Deeper Learning Design are Pedagogical Practices, Learning Environments, Learning Partnerships, and Leveraging Digital.

The greatest number of approaches were under the category of Pedagogical Practices and involved employing innovative instructional methods and educational strategies that were tested, refined, and appropriately applied at MMS. These included the use of a praxis-oriented pedagogical paradigm, teaching mindfulness meditation exercises, using student-centered or inquiry-based learning approaches under a general "Teachers Talk Less" school policy, extra-curricular programming, and an integrated school-wide environmental campaign. These approaches impacted deeper learning by ensuring that lessons were personally meaningful to students, developing reflexive capacities, centering on student agency and active learning, promoting meta-learning, developing critical thinking, promoting learning beyond books and

classrooms, and facilitating opportunities for students to creatively engage and to effect positive change in their communities.

Under the category of Learning Partnerships were approaches that leveraged various relationships towards expanding the learning horizons of students or allowed for the creative re-imagining of student and teacher roles in the learning process. These included building relationships with teachers from the local school for the arts in order to provide Khmer music and dance lessons for the MMS secondary school, organizing service-learning activities, honing the leadership skills of student representatives, encouraging high school students to teach and mentor younger students in the school, and close coordination and constant communication with parents. These impacted deeper learning at the MMS by fostering artistic creativity and greater ownership of the learning processes among students, strengthening community spirit, and allowing students to re-organize and apply their own schemas of understanding through the teaching and mentoring activities given them.

Approaches addressing the Learning Environments at MMS involved creating or controlling physical conditions and the organizational culture of the school, aspects that impact the psycho-emotional cognitive and social of deeper learning. The characteristics of these learning environments were discussed in detail in the previous section of this chapter. In this section, however, it is worth underscoring that, as regards learning environments, MMS undertook a careful process of consultation, design, and evaluation in the design and construction of various components of the campus and that it enacted value norming in several ways for the community to establish the organizational culture there. Both the physical and cultural aspects of

the learning environment served as the scaffolding for arcs of learning that carried powerful learning experiences forward to deeper learning.

Finally, approaches involving leveraging technology were ways that MMS encouraged and enabled the use of various modalities of digital technology to enhance student learning and to facilitate teaching. These included the school administration's efforts to upgrade the school's digital technology facilities (e.g., Wi-Fi-connectivity in strategic areas on the campus, equipping all classrooms with LCD-projectors, and providing more desk-top computers for the computer lab) and incorporating the use of the available digital technologies into various instructional strategies (e.g., creating and replicating lesson plans, communicating via *Telegram groups*, and the use of PowerPoint Slides for lectures and student presentations.) These impacted deeper learning by providing opportunities for the students to engage with and to apply digital modes of learning, increasing student motivation and interest. The ways that digital technology also facilitated the administrative and classroom duties of teachers also enabled them to be more attentive to engaging students more deeply.

Table 8 contains, in summary, these 15 approaches to deeper learning employed by teachers and administrators at the MMS with brief descriptions of these approaches, the various components of each approach, their relation to deeper learning, and feedback from MMS teachers and students regarding these practices. I am presenting these in tabular form for brevity because these practices have already been described in sufficient detail by other studies and because the focus of this study is on the broad, systems-wide approaches taken to promoting deeper learning. Deeper explorations on the efficacy of these approaches can be the focus of future research.

Table 8*Notable Deeper Learning Approaches in the MMS*

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
PEDAGOGY: Mindfulness Meditation Exercises	10-minute guided periods of silent reflection in which students could quiet down, periodically look back and review significant events of the day or week past. Sometimes students were asked to write journal entries during the meditation.	Twice a week, Mondays and Fridays at the 7:00AM Flag Ceremony; Teachers took turns as facilitators and occasionally student representatives also led the meditations. Four to five guide questions were used to walk students through the meditation. Included periods of silence so students could more deeply consider the questions on their own.	This practice aided in deeper listening and greater focus, developed reflective capacity, enabled meta learning by allowing students to recall and more deeply understand helps to learning, strengthened cognitive links between lessons and daily life.	Meditation “helps us to focus more, and sharpens our mind, allows us to see and reflect on things that have happened in our life” (Mau, G10, F, 15); “helps to calm us down” (Romyol, G12, F, 19). “We become mindful of previous activities we engaged, useful activities we did, activities we need to improve on, to remind ourselves that we need to keep improving. (Chanda, G11, F, 17);	This practice “fosters hope and gratitude” (Louk Son); “helps students focus on areas for improvement” (Lokru Kon); “helps the students to go deep, look deeply at themselves, at things they have done and things happening in their life” (Nekru Chivet);
PEDAGOGY: <i>Teachers Talk Less</i> Policy	A general classroom policy for teachers to keep lectures to a minimum, and to supplement these with various Student-centered or Inquiry-based approaches in class.	Group discussions, group presentations, students posing questions to presenting groups, use of multi-media material (e.g., audio-recordings of readings, and videos) as platform for discussions; Class debates, etc.	This approach fostered higher levels of student engagement, higher order thinking (Bloom’s); active learning and greater exercise of student agency (i.e., resulting in greater control over one’s learning process).	“In group study or group research, fast learners give time and space to [help] the others. They won’t just think about themselves . . . everyone listens to each other. If there are slow learners, the fast learners . . . help, explain and teach them.” (Chea, G8, M, 16);	“This gives students a chance to ask more questions” (Louk Son, School Director); “all the important ideas from the lesson came from the students. And then the teacher just pointed it out at the end. See this is teaching! This is the actual teaching.” (Principal Lina)

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
PEDAGOGY: High School Academic Debates	Two mixed teams of students with four members each from Grades 11 and 12 debated on a topic that was assigned to them one week in advance. Organizers used a pre-determined debate format. All students from Grades 10, 11 and 12 served as the audience. Three pre-selected teachers served as the panel of judges and decided on the winning team based on pre-determined criteria.	The chosen proposition was a contentious, highly relevant issue (“The youth are key players in the Cambodian government’s fight against drugs.”) Teachers were assigned to be debate team advisors, providing guidance for the preparations. A mock/ practice debate was conducted two weeks prior, using another well-chosen topic. For the mock debate, students only had three days to prepare, and for the main debate students were given one week to prepare).	The debate helped develop critical thinking, analytical, evaluative and reasoning skills; facilitated the creation of new knowledge in the ways that arguments and reasoning were creatively structured and employed; ignited passions and strengthened collaborative skills and team spirit and can allow students to engage in relevant conversations and arguments about topics of significance to their world and future when topics are well chosen.	This activity helped us “learn and master information about living conditions in Cambodia, the national economy, and the general state of the country. We had to struggle together to help and challenge one another, using proper language for discourse, doing the necessary research, and to understand the proposed topics deeply.” (Rithy, G11) “Because topics were well chosen, we listened attentively to each speaker and followed their train of thought and were able to track the direction of their ideas. And we could think for ourselves how well they strengthened the propositions, or if they thought as we did.” (Reaksmeay, G11)	Debates promote lively discussion among students especially on These are "hot topics" (e.g., global warming, role of the youth in Khmer society); “After being exposed to academic debates, students clamor for debates to be organized in class and for the whole secondary school.” (Principal Lina)
PEDAGOGY: Extra-curricular Programming	Faculty and staff organized various special activities for students (conducted	Field Trips, Quiz bees, Public Speaking in English contests, Cook-outs,	Extra-curricular activities encouraged learning beyond books and	These activities “made me see learning in a different way. Even if the events were fun and	“Students and teachers were so happy to be able to do Events Week again after two years of not

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
	in and out of the school) whereby students could experience learning in creative, fun, energizing and varied ways. They structured these events to complement academic programming and to be enjoyably educational.	Participation in Regional STEM competitions, Talent shows, Scouting Club activities, etc. Faculty were assigned to supervise activities and student representatives were allowed to assist in running these activities.	classrooms; developed life-long learning dispositions that were honed even outside of classroom instruction; built and enriched the spirit of community, collaboration, solidarity, fun, and joy that fuel deeper learning.	even funny . . . Like the comical parts of the talent contest, or the English-speaking contest, or the debate or quiz bee, I feel like those all were teaching us lessons.” (Reaksmey, G11, F, 16)	doing so because of COVID” (Principal Lina, Nekru Bopha); It lifted the school spirit and helped students enjoy at the end of a difficult schoolyear (Nekru Rotha);
PEDAGOGY: A Praxis-oriented Pedagogical Paradigm (POPP)	The school employed a pedagogical paradigm involving five key features: Context, Experience, Reflection, Action and Evaluation. Experience, Reflection and Action formed the core of learning experiences. This core was anchored on an understanding of student context and strengthened by evaluation processes. All these	Training and updating for Teachers on this Pedagogical Approach. Sample Lesson Plans. Supervision. Student evaluations. Appraisal forms for teachers were based on this framework. Context involved macro and micro understandings of international, national and local situations that affect the lives of students on which lesson plans are rooted. Experience involves both	Centering student context ensured that lessons were personally meaningful to the students and related to their everyday realities. Experience ensured that students were not regarded as passive learners simply expected to be receptacles of knowledge but were actively engaged in its transfer or creation. Action allowed for the application or experimentation with	“In the book, there is theory, but in practice we learn more and more clearly. . . . We are not just focused on theory, but we get to practice and see things with our own eyes. Touching, learning with our own hands. It’s not just about what’s in the head alone.” (Kakada, G11, M, 17) “There are some documents that can be found only through proper research, that provide information that cannot generally be	“I find that these policies on POPP, can be effective [for] particular areas. But I find it quite hard to implement this for some subjects. For example, the social sciences, morality, Khmer literature, geography, all of these things, seem to be very practical. It seems to be very helpful. However, when it comes to using POPP in the context of the natural sciences, such as mathematics, physics, chemistry, all of these things, biology... It is

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
	elements formed an iterative, enriching learning loop. Teachers made use of this framework in designing and implementing their lesson plans. Teacher appraisals conducted by head teachers, the principal, school directors and others in the appraisal committee also made use of this framework to evaluate the performance of MMS teachers.	classroom and laboratory activities (including but not limited to lectures). Reflection can occur in the classroom or can be given as homework in the form of guide questions, essays, or other ways to facilitate encourage students to abstract from their experiences or connect these with previously acquired modes of understanding; Action can involve projects or action plans through which students will enact, apply or put to practice lessons learned.	knowledge. Reflection developed reflexive capacities and allowed for a deeper understanding of lessons by inter-relating them with previously acquired knowledge and schemas of understanding. Evaluation ensured that the learning process remained open to new data that could inform the understanding of the context and experience of the students and thus enrich the lessons further.	provided by just anybody. This is an important learning for me. . . . It is easy to state our own opinions. . . but if we really want to learn, we will have to see that it is not that easy to get to what is true.” (Rithy, G11, M, 18)	more difficult to [apply]. (Nekru Panya)
PEDAGOGY: Integrated Environmental Campaigns	Various ways of highlighting environmental problems and adopting	Science and Social Science Classes, School-wide activities, Regular maintenance	Integrated environmental campaigns allowed students to engage and change their	“I am used to surroundings that are a mess or are so disorganized. But when I come to this school, our	“After helping to give workshops in other schools, our students saw the realities in the rural schools and realized how

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
	environmentally restorative practices were integrated in classroom instruction and the academic curriculum in most subjects, school policies, extra-curricular activities, signage around the campus and waste management infrastructure.	Activities, School policies discouraging use of single-use plastics, on use of single-use plastics, contracts of concessionaires at the school canteen not allowing the use of plastic take-away bags or drinks sold in PET bottles, banners around campus promoting zero-waste lifestyles, garbage segregation bins for compostable and recyclable, and special events like planting of native trees and clean-ups in which students, teachers, and administrators jointly participated.	world through a deeper understanding of everyday problems and through applying practices that mitigated or prevented a worsening of the environmental crisis; provided community support through shared vision, accountability structures, school resources and follow-through programming that acted as arcs of deeper learning for the students.	teachers here help raise my awareness [of how a good environment is important.]” (Thida, G12, F, 18); “The program also helped us understand about doable things- the reduction of water use, reducing emissions of carbon in the air or some other toxic substances that pollute the air.” (Rithy, G11, M, 18)	good an environment they were studying in. One of the students said ‘I realize how much I have received and I think of how I help others.’” (Louk Son); “Parents have been very encouraging . . . They do not mind waiting after school while the children clean-up, and when we had to suspend the school-clean-ups because of COVID, eventually it was parents who requested this be re-started.” (Principal Lina); “Because of [our surroundings, we] are happy. We even have a clean water reservoir on campus, and so many nice trees.” (Nekru Bopha)
LEARNING PARTNERSHIPS: Classical Orchestral Khmer Music and Dance Lessons	In partnership with a teacher from the local school for the arts, MMS provided regular instruction and supervised practice of Khmer	Once a week with the teacher; Students could access instruments in their free time to practice without the teacher; Recitals or	These lessons provided the opportunity to engage mastery, identity, and creativity in ways that facilitated powerful learning	“[Since] I came to this school there were so many things about our culture that I learned to appreciate more.” (Mau, G10, F, 15).	“Students like it and are very happy when the school has visitors and students are invited to perform for them. This also helps to build their

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
	Orchestral music and dance one to two times a week, with occasional discussions on theory/historical background or significance of pieces chosen for the class.	culminating performances were made on graduation, but students were also given chances to perform for special occasions of the school	experiences toward deep learning.	“I see that when I am able to participate . . . even if this is a small act, I come to know parts of our culture we have had and treasured from the time of our ancestors. If we do not practice it, this can be lost in the long run and that would be very sad. Even if I haven’t even graduated, just by studying that I have helped to keep our heritage alive. (Phak, G10, M, 16)	self-esteem.” (Louk Son, School Director)
LEARNING PARTNERSHIPS: Service-learning Activities	Students were made partners in deepening core values and fulfilling the community-orientation of the school through extra-curricular service opportunities for students which allowed them to join outreach, environmental advocacy and protection, and community-strengthening activities.	Persons for others day, Student Mentoring, Tree planting, Community clean-ups, etc.; Pre-activity briefings and post-activity evaluation, processing, and reflection prompts were critical for deepening the experiences of students;	“[T]his develops a sense of warmth and caring, teaches us to put others ahead of ourselves, leads to good relationships that in turn lead to peace” (Tola, G11, F, 17); “makes us dependable and trustworthy” (Bunroeun, G12, M, 18); “helping others makes me happy” (Kakada, G11, M, 17; San, G11, F, 15); “makes us feel connected, like a family” (Mau, G10, F, 15)	Students learn how to love, to care for one another and how to be selfless. Selflessness will help form them to be people who will not be hurtful to others or society (Nekru Panya); Helps students be discerning about what will help others grow or what might diminish others’ dignity; leads to happiness; helps students live life fully and make a difference (Lokru Kon)	

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
LEARNING PARTNERSHIPS: Student Leader Program	Student leaders elected by each class made up the pool of student representatives given leadership tasks which they undertook in the service of entire secondary school student body. As leaders, they liaised between the teachers and their classmates, facilitated various activities, gathered student feedback and informed teachers of class concerns.	Leading the flag ceremony every Monday and Friday (assigned groups of Student Leaders take their turn); Making announcements and reminders to the class as instructed or suggested by their teachers; Serving as a disciplinary committee that helps to remind other students about minimizing noise and distractions inside and outside of classes; leading mindfulness meditation exercises.	Helped develop student agency, responsibility and leadership skills which made for <i>learning that sticks</i> and which they would be able to apply to various work and life circumstances in the future; This gave the students a sense of responsibility and pride in being able to contribute to the running of the school; helped with confidence building and public speaking.		Student-leaders have helped us shape new policies in tardiness, traffic on campus, and garbage reduction. They are also a good source of feedback (Louk Son);

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
LEARNING PARTNERSHIPS: Parent Engagement	School leaders managed relationships with parents to ensure strong collaboration in caring for, motivating, and forming students and running the school.	Regular Parent Association Meetings; A Parent Association Leadership council; Open communication lines between the Parent Association and the School Admin; Open communication lines between teachers and parents; Periodic student assessment reports which parents/ guardians are required to sign; Protocols for informing parents when their children are absent or tardy.	Helped build the sense of community and family within the school community; Allowed teachers to understand student family contexts more clearly and to provide extra supports when necessary; Class reflection prompts, lessons and discussions can be adjusted to speak directly to student circumstances to ensure that these are personally meaningful for the students;		Parents have said “What I like about this school is that even when my son or child is absent or late, you keep calling to us and checking whether our son or our child is at home.” It makes them feel like they really belong to the school. And our teachers are really taking care of their children; we feel like we really get to know the students. (Principal Lina)
LEARNING PARTNERSHIPS: Student Mentoring/ Student Teaching	The school provided various opportunities for students to share previously acquired knowledge, curriculum content, or topics of interest with other students in a structured or semi-structured setting.	Better performing students are encouraged to facilitate study groups for their classmates; More senior students are given the chance to help those in the lower years to prepare for the National Grade 9 exam; Student	Teaching experiences allowed students to have greater mastery of subject matter taught, re-structure previously acquired information, identify links to other fields of interest, practice creativity, and build on the community spirit by being available for younger	This “makes me feel closer to other younger students, helps me build friendships; makes me learn a lot more; you can create the atmosphere of joy, make the class jolly and make the activity enjoyable, as opposed to making it too serious and just thereby stressing you out or making you	“These kinds of activities make the students happy and proud of themselves. Normally, here they are recipients, and can be passive. But in reaching out to other schools, they play the role of educators and teachers and leaders. So that kind of thing makes them proud. And it encourages them and

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
		volunteers are allowed to join organized environmental advocacy workshops conducted in public schools in the province and are given roles as resource persons or teachers	peers. Teaching, when coupled with reflection, also deepened meta-learning insofar as students reflected on, experimented with, and evaluated different ways of teaching based on an awareness of their own learning processes.	bored.” (Reaksmey, G11, F, 16); “[E]ncourages the intelligent students to reach out to those weaker, to lend a hand so that those who are weak or slow would be able to catch up and participate, join in the discussion. Helping others, also helps us improve ourselves.” (Dara, G9, M, 15)	makes them want to participate more in such activities, because these allow them to do things they eventually love to do.” (Nekru Chivet)
LEARNING ENVIRONMENT: Purposeful Design of the Campus *see the subsection on the Physical Environment at MMS (p. 182-188) for further details	Incorporation of green-living considerations, gathering spaces, and Khmer culture into the architecture and general lay-out of the campus	Brainstorming a well thought out vision for the school and the campus; consultative, iterative process of construction and campus development; local representation in the planning team, well-guided and well-documented decision-making processes	Created a highly conducive learning environment which students and teachers alike were happy to be in, raised environmental awareness, promoted a sense of what was doable, inspired new ways of living, and deep reflections; activated psycho-emotional aspects of deeper learning including wonder, vitality, passion and love.	The MMS environment is “very conducive for studies” (Dara, G9, M, 15); “gave me the feeling of wanting to come here and study” (Chivy, G10 F, 16) “Even before I applied here, my father would bring me once or twice a week and I would play in the playground... I really liked coming here because of the surroundings . . . the trees, the fresh air.” (Phak, G10, M, 16)	“because of the cleanliness here, I am happy, other teachers are happy, and the students themselves are pleased. . . This helps the students focus on studying hard in the school.” (Nekru Bopha) “With the environment . . . and the cleanliness here, it is already obvious that we are so different from the other schools.” (Lokru Kon)

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
LEARNING ENVIRONMENT: Value Norming (see subsections on Organizational Culture, Emotional Atmosphere and Relationships on p. 159-180 and 198-208 for further details)	Articulation, establishment, modelling and reinforcement of desirable values that determined organizational culture and the quality of relationships in the community	Programing and ways of proceeding that foster the school’s core values, Khmer Cultural Heritage, learning beyond books and classrooms, the sense of safety, solidarity and joy in community life, and healthy, vibrant relationships in the school community	Core values formed arcs of deeper learning; Centering Khmer culture deepened the sense of shared identity of students in the school, which, when paired with mastery and creativity, created powerful learning experiences. Community acted as the reinforcing context that allowed powerful learning to become deep learning.	“When I come to school, students of other grades with whom we may not be friends are friendly. They say hello. They are welcoming. They greet the teachers respectfully. When they say hello to me, I feel like I am home. This encourages me to come to school. It makes me feel like the school is my home.” (Chanda, G11, F, 17). “I like ‘persons for others’ because as people, we cannot live alone, we have to journey with others. Being able to share oneself with others makes us happy” (San, G11, F, 15)	“Even if we are lacking in resources, we need to find ways to have fun together, even if it’s just to go out to have a simple meal together. Because the school doesn’t have a budget for this, sometimes they ask if I can allow this or if I can help cover the expense, and sometimes I do so out of my own personal money. I think such a sacrifice is worth it, for the solidarity this builds. All of us are one, and such forms of encouragement are necessary and very important. (Louk Bop)
LEVERAGING DIGITAL: Upgrading Digital Facilities	Investing in equipment, software, hardware, and connectivity, for use by faculty, students and staff of the school.	LCD-Projector equipped classrooms, School Wi-Fi (for teachers and for student research outside of class hours), A Computer lab/classroom with a 1-1 computer to student ratio.	Learning designs that leveraged digital technologies helped develop student's skills in web or computer-based platforms.	“Even early on we start learning [to use computers] and in our higher years, we already made slide presentations on our own... These opportunities made me more courageous. I am able to learn speak and to engage more.” (Phak, G10, M, 16)	“With projector-equipped rooms, we are spared from writing a lot on the board, we can use that time for more participation in the discussions... this also really helps students in more quickly capturing some lessons.” (Nekru Chivet)

Table 8 (continued)

Notable Deeper Learning Approaches in the MMS

Approach	Brief Description	Components	Relation to DL	Student Feedback	Teacher Feedback
LEVERAGING DIGITAL: Incorporating digital technology applications to instruction, student engagement, and learning	Encouraging and enabling the use of various modalities of digital technology to enhance student learning and to facilitate ease of teaching (thus freeing up teachers to focus more on deeply engaging students).	Use of PowerPoint slides, video-clips, audio recordings, etc. for class discussions and lectures. Use of messaging platforms (e.g., Telegram) for dissemination of class notes and to broadcast reminders and student assignments.	This helped motivate student learning (e.g., when students were eager to prepare class presentations because they were allowed to use the school computers to make PowerPoint slides). Teachers' use of prepared slides for class allowed them to keep focused on the students and be attentive to ways of engaging them more deeply.	“This expanded our skills using digital technology and our research abilities... and also helped us prepare for our future, for higher education . . . and for future jobs because we cannot avoid all this technological use.” (Dara, G9, M, 15)	“It engages the students and makes them learn more.” (Lokru Kon) “It makes students more eager to do their homework” (Principal Lina); . . . “more enthusiastic about the lessons” (Nekru Bopha) “[Thanks to the slide projector] I never have to turn my back on the students, and I see all of them all the time. (Nekru Panya)

Vignettes on Deeper Learning Approaches at the MMS

To further illustrate how some of these deeper learning approaches taken by MMS animate and activate powerful learning experiences and deeper learning, in Figures 9, 10, and 11 are three vignettes from this case study. Each vignette represents a different school-setting within MMS (the Khmer Literature classroom, a performing arts class, and the regular school-wide assembly), as well as different approaches that engaged different aspects of deeper learning.

Figure 9

Vignette 1. Khmer Orchestral Music Lessons Class

The sound of the Khmer *pinpeat* (traditional Khmer ceremonial instruments) predominated by metallophones and battle drums travelled across the campus and into many of the homes in the surrounding village. The music was coming from the open multipurpose assembly hall (a covered court with no walls). Twenty-eight students (an entire Grade 8 section) were gathered on the stage, each completely absorbed by the task of playing the instrument assigned to him or her. There were two wooden xylophones, two metallophones, two sets of hanging gongs, two large battle drums, 12 wooden flutes and one cymbal. Some of the instruments required two to three students to play. All 28 students played a part in the orchestra. The teacher had written some notes on the whiteboard at the back of the stage, but none of the students were looking at the board while playing. They had mastered the piece and were playing from memory, and all were deeply engaged. They looked intently focused, taking their cues from the other instruments and the occasional directives from the teacher who was conducting the piece. In-between playing, there were short breaks of laughter and smiles. Sometimes, some students would ask each other about parts they were unsure of. Students who were more certain of their parts taught others who weren't.

The class was learning a piece they were to perform for the upcoming foundation day. Principal Lina explained as we observed the class that last year's performers were proudly able to perform this piece for their parents and the whole school. This year's class would be, too. She added that these instruments were purchased for supplementary weekend classes at the school's community learning center. (Students of other schools are welcome to attend these activities there.) But an opportunity presented itself when the (western) music class teacher (who taught piano, note reading, singing) could no longer teach. The school director, who was looking for more ways to promote Khmer culture, found a local teacher who could teach Khmer ceremonial music as part of the main curriculum for the MMS' secondary school. MMS school leaders conducted informal surveys and found that most students were very much interested and excited by the chance to learn to play a traditional Khmer instrument and to join an orchestra. School leaders therefore decided to incorporate this into the curriculum for all secondary school students. No other secondary school catering to students from low-income families in Cambodia provides such classes.

Figure 10

Vignette 2. Mindfulness Meditation Morning Exercise

By 7:05 AM, all 343 students of the secondary school and their teachers were at the assembly hall, as per Monday and Friday routine. Within ten minutes, the flag ceremony was conducted, announcements were made, and teachers used the remaining 10 minutes for the regular guided meditation.

Nekru Panya, the teacher-in charge of the meditation for the day started out by reminding the students to assume a meditative sitting position. Students were already seated on the floor before this as there were no chairs in the hall, but for the exercise, they were asked to sit with their backs straight and shoulders relaxed, legs crossed and palms on their knees, and to close their eyes. Students were given 2-3 minutes to quiet down their thoughts, by taking long deep breaths while sitting in silence. After the moment of silence, Nekru Panya asked the students to look back at the week while thinking of the following questions: What made you joyful? (a brief pause); What made you sad? (a brief pause); What were you able to do? (a brief pause); What were you not able to do? (a brief pause); Where did you do well? (a brief pause); Where did you not do well? (a brief pause).

In the remaining 4-5 minutes, the assembly sat in silence as students reflected on these questions. When the time was up, the teacher gently brought the meditation to a close by reminding the students of the importance of being thankful for good experiences and kindness received and to strive to do better in areas they did not do so well. After the meditation, the assembly ended and students walked out of the hall, class by class, following their teachers to their classrooms to carry on with the start of the school week.

Figure 11

Vignette 3. Khmer Literature Class (Applying the “Teachers Talk Less” Policy)

After a guided review of the previous lesson, Nekru Panya played an audio recording of the text for the day’s discussion. The audio recording was well-produced, had a good narrator who read clearly, and in a well-modulated and animated manner. The material was about a wise village elder in Japan who lived on the mountain. The students listened attentively.

Nekru Panya then divided the class by row and assigned them to discuss each question. The teacher went around the room, joining the discussion groups, asking probing questions. Five to six students were in each of the groups. The mood was informal and playful. Some groups sat in circles; some students sat together on the same chair with their arms around each other. All groups had a student writing the answers, some groups had two or more scribes.

Halfway through the period, Nekru Panya facilitated the group presentations. She first clarified the norms for the presentations, saying that the class was not only expected to listen but also to challenge and raise pertinent questions for the group. In groups of three, students presented. The discussions circled around the practice of burning of rice fields featured in the audio recording. This was done as part of the land preparation for farming cycles.

Some students were playful and comical, but the rest of the class asked serious, challenging questions and the presenters tried to answer the questions as best they could. Even students who were being playful during the time for group work, asked engaging questions. The teacher allowed the presenting groups to take command, filtering questions of the class. When presenting students gave clear answers there were signs of support from the class and the teacher. Some students gave thumbs up and some verbalized their “ok”s! The teacher smiled, nodded, and gave a thumbs up as she watched from the back of the class. When the three presenters could not answer the questions, some other group members stood up and came forward and helped to answer the questions. The teacher also helped to unpack questions that were not presented too clearly by students, rephrasing and echoing some points, asking the students if that is what they meant. She also highlighted connections between questions that students were asking with points earlier raised.

At the end of the class, the teacher gave a recap of major lessons drawn from the day’s text, based on the students’ presentations.

I will now briefly highlight notable features of the deeper learning approaches illustrated by the three vignettes. Vignette 1 illustrated the *pinpeat* music class through which the school leveraged the availability of music and dance teachers from the local school for the arts, student's love of Khmer culture and national pride, and the powerful learning potentials of group performance art. As described briefly in the Vignette, students mastered how to play their part on their assigned instrument for a traditional ceremonial performance piece guided by the teacher's instruction, repetition, and practice, and by being allowed to teach and learn from one another.

The genre of the piece that the students were learning—Cambodian ceremonial music, traditionally used for events in the royal court and now often used in official government affairs or big celebrations like weddings and funerals—evoked a deep sense of connectedness to their Khmer identity and national pride. As some students pointed out in the FGDs, learning to play these pieces was for them not only pleasurable, but also deeply meaningful and socially contributive. As Phak (G10, M, 16) reflected, “Even if I haven't even graduated, just by learning this music I have helped to keep our heritage alive.” The intensity with which students needed to focus on playing according to the rhythm set by the conductor and the other instruments was a critical path to learning collaboration and teamwork. The pride and joy from being able to perform the piece for the foundation day crowd and for their parents strengthened their sense of identity, accomplishment, giftedness, and fostered creativity via performance art. And the receptivity of school leaders to student sentiment in favor of such classes and the willingness to invest and experiment with including this in the regular secondary school curriculum, modelled innovation for students and evidenced how the school itself was a learning organization.

Vignette 2, on mindfulness mediation practice in the MMS, illustrated how the reflective capacities of students were used to structure arcs of deeper learning. Although this practice was based on the consciousness examen, a Catholic form of meditative prayer, school leaders adapted this approach for use in a non-religious, educational setting. Adaptations to the practice were necessary, since most of the MMS students were Buddhist and since religious prayers, rites, or teachings were forbidden by the ministry of education to be taught in primary and secondary education schools.

Arcs of deeper learning engaged in this instance were the emotional significance of school events (allowing students to see patterns of sadness or happiness in their learning experiences), frames of self-development (in terms of what students had done well and which were areas for improvement), and the arcs of time spanned by the periods reviewed through the meditation. These learning arcs effectively scaffolded trajectories on which powerful learning moments were carried forward to deeper learning and longer-term retention. They also enabled students to relate new information with schemas of previously acquired information due to the repetition and reflexivity that the exercise allowed. Additionally, both teachers and students reported that these mindfulness meditation practices resulted in increased focus, minimized distractedness, and sharper memorization skills. Finally, the questions used to frame the mediation in the Vignette also centered student experience and agency and promoted meta-learning. They helped to heighten students' awareness of processes and activities that were impactful of their educational goals, thereby strengthening learning.

Vignette # 3 featured a student-centered approach to promoting deeper learning that Nekru Panya used for her Khmer Literature class at the MMS. Several elements of how she

conducted the class with this approach are noteworthy. Nekru Panya spoke only for an estimated 25% of the class time, mainly to ask questions, provide instructions for the groupwork, reiterate points raised by students, and bring the class to a synthetic end. The rest of the class time, students' voices were heard, either raising points or asking questions in the discussion groups or in presentations being made by the groups.

Throughout the class, Nekru Panya maintained command of the class, as evidenced by the class quickly quieting down and listening when she would speak, but she did not need to dominate the conversation in order to assert her command. She remained warm and friendly to the students, was present and very attentive, but did not necessarily have to be in full control of everything happening in the class. She allowed the students to be playful and informal and, more importantly, to learn from and teach each other. Interestingly, with her guidance via the norms and protocols she clearly set for the class, it was other students who seemed to hold their noisier, less serious classmates accountable, making sure to challenge them come their time of reporting. Surprisingly, several students who were being playful during the time for group work asked highly engaging questions and raised points that the class appreciated.

Noteworthy also was Nekru Panya's use of technology and her chosen topic. She used a simple audio recording, but one that was well chosen and evocative for the students. The story and questions posed allowed students to think of what they would do if they faced such a decision in their farms in the future and clarified the underlying values of the given situation. These issues related directly to the lives of students of the MMS, 95% of whom come from farming families. The majority of farmers in Cambodia practice field-burning for land preparation, despite the many hazards and the detrimental effects on the quality of the soil.

Through careful preparation of the lesson, Nekru Panya effectively ensured deep connection to the students' sense of *identity* and life in their communities.

I highlighted these approaches to deeper learning in MMS (featured in the three vignettes and detailed in Table 11) for the following reasons. Firstly, these approaches, in themselves or in combination with the other elements of deeper learning highlighted by this case study, have observably evoked powerful learning experiences and created arcs of learning toward long-term retention of lessons in the MMS. The intersections of *mastery*, *identity*, and *creativity* emerged through these approaches and created powerful learning experiences for the MMS students and teachers, as well, and arcs of learning were scaffolded by these approaches. The arcs of learning employed by these approaches were not limited to the extended periods of time during which lessons were carried forward, as Mehta and Fine (2019) suggested, but also included value systems and local culture, which were leveraged towards deeper learning goals.

Secondly, many of these approaches, while not new to educators in other school and country settings, are proving to be innovative and transformative educational approaches for a school in a low-income community in rural Cambodia. Most Cambodian public schools have not and do not employ these approaches. Educators in Cambodia exploring ways to improve the quality of education in their schools may benefit from adopting these approaches with adaptations appropriate for their own school contexts.

Thirdly, most of these practices are replicable in resource-limited schools, requiring mainly teacher training and minimal capital outlay. Cambodian public schools continue to suffer from major resource constraints. Many public schools, for example, do not have the funding to maintain school buildings or to repair damaged ones, let alone to invest in capital-intensive

innovations. Leveraging partnerships, ingenuity, and creativity in maximizing available resources and human resource development, however, are within the means of most public schools and are among the minimal requirements of most of these approaches. The opportunity to make best use of these will be further discussed in Chapter 5.

In summary, MMS employed various approaches for promoting deeper learning. These approaches involved purposefully creating and maintaining learning spaces, an organizational culture, and a school atmosphere suitable for deeper learning. They cultivated partnerships that allowed for innovative practices and the reshaping of roles in learning processes. They made creative use of various pedagogies, combining and leveraging them toward creating powerful learning experiences and arcs of learning. And they made use of available digital technologies, albeit not as ubiquitously as is possible in developed country settings, but nonetheless aiding both teachers and students to attain deeper learning goals.

While all these approaches were proving effective in MMS, implementing them did not come without challenges. The school, despite showing some success in furthering deeper learning, continues to face several difficulties. In the following section, I will be expounding on these, in direct response to the third research question, “What challenges to promoting deeper learning do students, teachers, and administrators face at MMS?”

Challenges to Promoting Deeper Learning

I love studying Khmer and Chemistry the most. These subjects are helping me to reach for my dream of becoming a teacher someday. I want to teach schoolchildren. There are many who, up to now, don't have a chance to study. I want to teach in the future to help change that, so that all schoolchildren will have an opportunity to go to school.

—Lita, Grade 7 Student, MMS Documentary Video Archive Episode 3

Educational reform involves having to navigate and manage two highly complex transformational processes: organizational change and the historico-cultural evolution of the

context of school communities. Effective reforms thus engage systemic approaches that address the multi-various determinants of the desired change trajectories (Owens & Valesky, 2015).

Previous sections of this study have detailed how MMS leveraged organizational culture, emotional atmosphere, and the physical environment, as well as pedagogies, relationships, and digital technologies, towards deeper learning. This section highlights the difficulties and challenges faced by members of the MMS school community in doing so.

The most daunting challenges resulted from external historical-cultural factors beyond the control of the school leaders of MMS. These included the undying regard for the corrupting practice of *riyen kua* (tutorial classes provided by public school teachers for corresponding fees), encouraged cheating, the lack of regard for reading and education in general, and the complications that ensued from the onset of the global coronavirus pandemic. These external pressures compounded internal stresses of a newly established school whose school population had grown exponentially over the previous six years and that still lacked several critical student support structures, such as a student handbook, a school counselor, and a school mental health support program, at the time of this case study. The lack of training in student-centered learning approaches and the lack of teachers with specialized teaching skills impacted MMS, as it does most mainstream K-12 schools across the country. Identifying and understanding these context-based constraints to deeper learning is crucial to the sustainability and the success of promoting deeper learning.

Incompatibility with Prevailing Cultural Norms

Several factors which negatively impacted deeper learning efforts were culturally rooted. Participants reported various ways by which deeper learning clashed with prevailing cultural

norms in Khmer society. Among these were the dependence on *riyen kua* (the standardized practice of public school teachers providing supplementary classes for which they are allowed to charge fees and only during which they would teach the critical lessons necessary for students to fulfill their course requirements), rampant cheating practices allowed by teachers during periodic and national exams, the lack of a love for reading among Cambodian youth, the lack of valuing of education by rural farming families, the entry of part-time teachers who do not share the same value-systems of the school, hierarchical expectations among older teachers, and a two-tracking system prescribed by the government (which requires students to choose between the STEM track or the social sciences track.) While MMS was originally successful in creating an education environment that shielded students from most of these norms which are prevalent in the public schools, the growth of the school and the inevitable exposure of students to these cultural realities has made this shield more porous and the MMS school community increasingly susceptible to the negative effects of these conflicting values.

The Undying Regard for Riyen Kua

Despite the MMS's best efforts to provide an alternative educational system that would shield students from the corrupt practices in the mainstream schools, the perceived benefits of those corrupt practices are so deeply ingrained in the culture and psyche of the families of students such that they continue to impact deeper learning in the school negatively. The school director shared that, in recent conversations with several Grade 11 and 12 parents and students, he was surprised at how many parents were requesting that their children be allowed to take *riyen kua* in the public school. He tried to explain to the parents that MMS was established precisely to counter the need for practices like *riyen kua* that potentially corrupt the students'

understanding of the value and purpose of education, but still was met by great anxiety and by the unfounded belief that, if their children were not allowed to take *riyen kua*, they would eventually not pass the national exams. As a result of this, some parents pulled their children out of MMS and enrolled them in public schools where they could engage in *riyen kua* in preparation for the National exam for Grade 12 students.

There are several ways in which *riyen kua* is essentially opposed to deeper learning. At *riyen kua*, the traditional rote learning methods are applied. Teachers give straightforward lectures explaining the critical lessons covered in the national exams. Although students then have the opportunity to ask clarifying questions, there is no groupwork or discussion among the students. Students pay hourly rates to attend these classes and therefore expect the teacher to use the time with straightforward content delivery. There is no regard for student-centered learning, reflection, critical thinking, or creativity, as the main purpose of *riyen kua* is the transfer of information that will help students to pass the national exams. As such, *riyen kua* also reinforces the “right answerism” (Akande, 1998) that is, in essence, the antithesis of deeper learning.

At the time of this case study, MMS school leaders were still at a loss as to how to address this concern, but they had hoped that in time MMS students could disprove the need for *riyen kua* by performing well in the national standardized tests. Nonetheless, it was apparent that the prevailing value which *riyen kua* is given in the macro-environments surrounding the MMS is negatively impacting deeper learning initiatives there.

Encouraged Cheating

Another external factor that eroded the deeper learning values of MMS was the culture of encouraged cheating found in the majority of the mainstream Cambodian schools. Principal Lina

shared about the struggle of Grade 9 students who were in the middle of taking the 3-day national accreditation exams while I was at MMS for this study. By the second day of the exams, exam proctors were encouraging students to copy from one another or to share their answers with the entire class. MMS students were shocked, disturbed, and confused by this, given the strict no-cheating policies in MMS. Students had already deeply imbibed the values of honesty and integrity through MMS's value-based formation approach but were now faced with the dissonant reality of a prevailing national system that did not care for these values and, more threateningly, compromised their performance in this crucial national standardized exam, the results of which are based on percentile rankings.

The growing school population of MMS has also required the school to hire part-time teachers from the local public schools. When this study was conducted, there were 16 full-time teachers and 50 part-time teachers, who made up the majority of the teacher population. Many of these part-time teachers, however, did not have to undergo the same training and orientation that full-time teachers did, and therefore did not always understand or subscribe to the school's core values. Participants of the study reported that this has caused many students of MMS to be disheartened upon seeing the double standards, of how some school policies (such as the prohibition of using plastic bags and of disposable plastic water bottles) that students are required to follow, are ignored or disregarded by the part-time teachers. Worse, Principal Lina has lately had to deal with reports from students of part-time teachers allowing them to cheat during their periodic exams in MMS. Nekru Bopha, who was also head-teacher in the secondary school, relatedly reported that many of these part-time teachers were older and more experienced

and were offended when younger, less-experienced teachers attempted to provide feedback or correction.

Some studies in the literature have highlighted that the Cambodian MoEYS has long acknowledged how rampant and highly problematic the culture of cheating has been over the past decade, even during the administration of Grade 9 and Grade 12 qualifying exams (Leng, 2017; Maeda, 2021). Like *riyen kua*, a culture of cheating strengthens the value for *right answerism* whereby students focus on getting the *correct* answer at all costs (Akande, 1998). The correct answer is simply what will allow them to achieve their short-term goal (i.e., passing a test), is not necessarily what is true or meaningful or applicable, and is likely information that will not be retained long after that short term goal has passed. This, again, was a clear sign that deep learning, at least in terms of long-term retention of material studied, was not happening where cheating and right-answerism were commonplace (Fullan, 2018).

Lack of Regard for Reading, Social Sciences or Education in General

Another cultural block to deeper learning is the low regard given to reading, to the social sciences, and to education in general. Several teacher participants lamented the continued difficulty of instilling a love for reading among Khmer youth. Love of books and reading is often what propels self-driven study, which, in turn, is where many of the building blocks of deeper learning are activated. Among these building blocks are analysis and evaluation (Fullan et al., 2018), re-structuring content, and preparing for class (Frăsineanu, 2013), which students are less likely to engage in without a love for reading and a commitment to self-driven study.

One participant shared that she believed that the two-track system imposed by the government fostered a belittling of the social sciences. Because many of the better-performing

students were given priority in selecting their tracks and ended up choosing the STEM track out of a belief that this would lead to them getting better jobs or opportunities in the future, students tended to look down on the social science track, where many of the lesser-performing students ended up. As such, many students looked down on the social sciences. Nekru Rotha expressed how this belief ran counter to deeper learning, insofar as social science approaches are complementary to STEM subjects and enable students to widen their perspectives and to connect new material to previously studied concepts and wider schemas of understanding which, according to Mehta and Fine (2019), were skills at the heart of deeper learning.

One of the students, Rithy (G11, M, 18), also shared his personal experience relating to the way Cambodian parents in rural areas still do not think much of the value of education. Rithy dropped out of school in order to help augment the family income and said that, for many families in the rural areas, parents would rather see their children work than finish school. He said,

young people and their families think that studies don't bear immediate fruit for them. Some of them just drop out of school and try to go abroad so they can earn additional income for their families. I think that is common here. . . . This poses a problem not just for the present, but for the future. Society will need people with knowledge, skills, intellectual capacities. If one country is lacking this kind of people, it can be very dangerous to the development of the country itself. . . .

I came back to studies because I know how important education is for my long-term future . . . believe that once I am learned and well-educated, no matter how long it takes, nobody can take that away from me, and I will be able to help my family and society at the same time.

This lack of regard for reading and for the multi-various academic disciplines, each of which is important to the progress of education and Cambodian society, and for the educational enterprise in general are major blocks to deeper learning. In summary, this low regard for

education and the difficulties in promoting love for reading, the undying regard for shadow education practices like *riyen kua*, and the rampant and widespread encouragement of cheating in national qualifying exams are culturally embedded realities that have taken root in the education system and present as complex problems to educators who seek to promote deeper learning in Cambodia. Creating a new education environment such as that of MMS has, to some extent, shielded its students from the negative effects of these factors, but not completely. As the school continues to grow and students are increasingly exposed to these factors, the risk of these incompatible value systems eroding deeper learning gains also increases.

Growing School Population

Increasing pressures of a fast-growing school population also negatively impact the school's ability to promote deeper learning. Since the founding of MMS in the early 2010s the school population has grown exponentially and has burgeoned to what was, at the time of the study, almost 1,000 students. Over the last five years the school has accepted an average of 120 new additional students per year (consisting of two new sections for the Secondary school, and two for the primary school). This has made it more difficult to maintain the familial atmosphere in the school. Several participants mentioned that, with the growth in the number of students, they saw a growth in the number of disciplinary cases, thus negatively affecting their morale. Several participant-students also expressed being disheartened at how plastic trash was increasingly seen around school grounds, classrooms, washrooms, and buildings, which makes them begin to feel that the school "is no longer as it used to be." Some students expressed that, in the past, they felt that they were consulted more and were listened to by school administrators when trying to address problems that affected the school. They said that presently it seems that

they are no longer consulted. Some students have also reported that the campus is much noisier than it used to be.

One student also reported that she felt that the student-teacher ratio was no longer ideal, particularly in the dormitories for boarding students, where part-time staff (who worked two different jobs in the daytime) were made to supervise the students during after school-hours. San (G11, F, 15) shared that,

what makes it difficult for me to study here is that in the new academic year, the number of students is not proportionate to the number of the teachers. This causes a lot of difficulties, because the teachers are not able to control and monitor the students properly anymore.

At the time of the study, there were 11 full-time Khmer teachers, five international volunteer teachers, and 42 part-time teachers in MMS Secondary school. At the start of the school year there were 343 students, but there were only 299 remaining by the end of the year, after 16 students dropped out, 15 transferred out, and 13 were dismissed for disciplinary issues. (The high number of student dismissals and transfers occurred after the visits I conducted for the study. I unfortunately, therefore, did not have the opportunity to investigate these occurrences in my interviews and focus groups.)

Given that the family-atmosphere, silence, quality of personal relationships, cleanliness, and care for the environment were identified by participants as among the enabling factors for deeper learning, the diminishment of these factors due to the growing school population has presented a challenge for the school. Enabling learning environments are one of the four key components of deeper learning design, and the school climates that result from this can help or hinder deeper learning (Fullan et al., 2018).

Problems that Ensued from the COVID-19 Pandemic

Compounding the difficulties of a school population that quickly grew in the first decade of the school's establishment were the complications and difficulties that resulted from the Coronavirus-19 pandemic. On March 16, 2020, the Cambodian Ministry of Education, Youth and Sports indefinitely shut down all school operations. Five weeks later, the Cambodian MoEYS required all schools to prepare and implement remote learning. This required an overhaul of the school's programming for the remote learning period. It required teachers to learn how to make video recordings of their lessons, to use synchronous on-line teaching platforms, and to engage students on Zoom. Administrators oversaw the purchase of video and streaming equipment, along with running the school on skeletal force as per local regulations which allowed only 10 people at a time to be on campus. Family liaison officers, together with teachers, spent several days of the week making house visits or teaching in makeshift outdoor classrooms near students' houses, where 10-15 students were allowed to gather. International volunteer teachers had to pre-terminate their service contracts as they pulled out of the country. These, of course, were simultaneously what school community members had to deal with, on top of the anxieties and complications of the highly restrictive pandemic period and of the deadly virus that eventually infected some students, teachers, and their families.

MMS was not immune to the global phenomenon of learning loss during this period. Archives show that an estimated 15% of their primary school students and 10% of the Secondary school students had no access to the remote learning opportunities provided by the school because they lived too far away from the school and/or did not have access to the internet. The

school director of that time also noted that, even if they were able to access the remote learning content, students felt there was very little learning and retention of the material.

According to the current School Director, Louk Son, many more problems arose upon the students' return to face-to-face classes. During the first year of in-person classes after the COVID-19 school closures, there was a spike in the number of disciplinary cases involving alcohol use in the school dormitories, bullying, and fighting that resulted in physical, even violent, altercations. At the time of the study, 31 students in the secondary school had transferred or dropped out. Tardiness had also become a more widespread problem—for both students and teachers.

While these are problems for school administration in general and not necessarily related to deeper learning in particular, participants of this study nonetheless cited these as factors that hindered learning processes. At the least, these were named as notable distractions to deeper learning, but, more seriously, these were disabling factors that made any kind of learning extremely difficult.

Absence of Critical Student Support Structures

Re-diverted energies of school administrators during this crisis period of the COVID-19 pandemic resulted in the temporary suspension of several key initiatives crucial to the establishment phase of the school. As such, several critical student support structures were lacking. At the time of the study, the school's policy manuals and student handbook were still being drafted by administrators. There were no protocols for the dismissal of students, no appeals process for students who were dismissed, and no appeals committee to handle such cases. Furthermore, the school had never hired a school counselor and had not developed a counselling

or psycho-social support program other than a 2-day seminar on relational life skills that students were required to attend once a year. Teachers and administrators were somehow expected to take on the responsibility of attending to the socio-emotional development and mental health concerns of the students, but were not provided the necessary training for this.

The combination of pressures resulting from MMS's quickly growing student population, the lack of support structures such as a student handbook, school protocols, and a school counsellor, and the complications brought about by the COVID-19 pandemic have created several pressure points in the school structure and community. Some teachers have admitted the difficulty of being overburdened by administrative duties that they help to fulfill (e.g., as head teachers or academic coordinators). The time and focus necessary to fulfill these duties make it impossible for them to do further research or to prepare for their lessons as well as they would want to. Some teachers who were interviewed were visibly stressed or anxious about workload and school concerns during and outside the interviews and verbalized this. One supervising teacher, Nekru Panya, said most of the part-time teachers in the school who teach in both the public school and at MMS are exhausted by their workload. Louk Bop, the Human Resources Director also said,

In my work I meet so many employees, most of whom ask to meet me because they have problems. They have anxieties about the workplace, or grievances, or lose sleep over matters at work. Even if they are not really suffering, or even if they have not been reprimanded by their superior, they may already be feeling they are not happy.

Participants of the study consistently said there were marked changes in the school community after returning from the COVID-19 pandemic closures. Lokru Kon found it difficult to articulate what exactly or why things had changed. He said this:

The students, in the beginning, tried to adjust themselves, were more docile, they were understanding. Now the students seem to be a little bit different in a negative way...I don't know why exactly, but they are different. Sometimes they no longer listen to teachers, and they become a bit naughty. I think maybe because they are got used to the environment and became overly familiar . . . they feel they know everything so they know how to . . . bypass the rules.

Some of the student responses during the FGDs, on the other hand, indicated negative feelings of disappointment and discouragement toward the unstable conditions of the school (changing environment, diminishing regard for cleanliness, rise in disciplinary cases, less cooperativeness among students.) Some students indicated some anxiety given the rising incidence of student dismissals and voluntary departures. Some students were able to verbalize that these negative emotions made it harder for them to focus on studies, especially in periods outside of class hours when teachers expected them to be engaging in self-guided study. These negative feelings had threatened the sense of community which, for Mehta and Fine (2019), provided the consistency necessary to bring powerful learning experience through arcs of deeper learning.

Limitations in Technical Skills of Teachers

Although student-centered learning was one of the school's core values, several participant teachers and administrators shared that many teachers in the school lacked the skills and special training that SCL required. Some of the teachers who had attended such courses while in undergraduate or graduate level courses in the government's pedagogy school said that what was taught there "was still not enough". As Nekru Panya explained,

The school has to strengthen teachers' capacities and skills, to be able to carry out student-centered learning, to... be more effective for the students. How are we to do this? How much of this should we be using in our classes? What examples we can work with?

Nekru Panya also admitted that,

in our school, many teachers are new and most of our teachers still use traditional methods of teaching... the teacher is just the center, the source that imparts knowledge. So the students just have to memorize and repeat what the teacher says... We need more teachers that would be able to really journey with the students, to accompany the students towards this new style of student-centered learning.

Students themselves, such as Kolab (G10, F, 16), were able to share what they observed about some teachers lacking in teaching skills. Such teachers do not remain focused on the lesson, are not able to hold the attention of the class, can be unfair in applying disciplinary measures, and end up being a source of discouragement for students. She further added, “some students are blamed for little faults, and this is magnified, and students would feel bad about themselves and would be discouraged from learning. And this makes [even us who only witness this] feel very bad too.”

The school director shared that, despite the highly positive reception of the Khmer music program in the school, one major challenge was the lack of teachers to be able to make such programs sustainable. In the whole province where the MMS was located, there was only one teacher whom they were able to contract on a part-time basis. This teacher, because of his other engagements in the government school for the arts, was sometimes unable to come for his classes or often arrived late, coming from back-to-back engagements. There was little that the school could do, according to the school director, but to work with this teacher’s limitations, since there was no one else for now.

Based on my field observations for this study and the responses of participants, the Khmer classical music lessons in MMS have been a one of the most visibly powerful ways that Mehta and Fine’s mastery, identity, and creativity come together for deeper learning. The lack of

competent teachers to sustain such a program, however, may make it impossible to sustain both the mastery which students gain and their engagement in deeper learning through Khmer music.

Other Student Concerns

Several other concerns of students also negatively impacted learning in general. One of these concerns was discrimination. Although the findings of the study showed that MMS had generally been able to promote an atmosphere of safety, acceptance, and non-discriminatory attitudes, there remained some instances when students felt discriminated against and when teachers saw non-inclusive behavior among their students. One participant, Atet (G8, M, 16), spoke about how discrimination against gay students in the school resulted in diminished motivation for studies. Consistent with how other participants cited the importance of respect, acceptance, and the sense of safety in in deeper learning, Atet shared that,

Sometimes people can laugh at you, mock you and ridicule you because of your sexual orientation. This can also discourage, because students feel they lose their interest, and become detached because they feel they are not accepted. They get discouraged and can drop out of school.

Some students and teachers also spoke of instances when students would rather not work with slower performing students for assigned group-work. This resulted in discouragement on the part of students with whom others would not want to work and the loss of the opportunity to collaborate with and to learn from one another.

Other factors not directly related to deeper learning, but that students mentioned made studying more difficult for them, were distractions posed by engaging in or becoming addicted to video gaming, alcohol, and prohibited drugs, as well as health issues and financial difficulties.

In summary, a confluence of factors internal and external to MMS presented challenges to deeper learning there. The prevalence of corrupt practices, including *riyen kua* and encouraged

cheating, in the macro-educational environment of Cambodia was negatively impacting the value systems of students, despite the school's efforts to shield students from these practices. The lack of regard for reading and education in general and the complications that ensued from the onset of the global coronavirus pandemic made it very difficult to build structures that supported deeper learning. External pressures compounded the internal stresses of a newly established school whose school population had grown exponentially over the preceding six years and that still lacked several critical student support structures, such as a student handbook, a school counselor, and a school mental health support program, at the time of this case study. The lack of training in student-centered learning approaches and the lack of teachers with specialized teaching skills played significantly among the deeper learning constraints. In the succeeding and final chapter, I will be discussing these challenges vis-à-vis the opportunities that MMS can leverage in order to overcome them.

To summarize this chapter, the case study findings suggest that the major determinants of deeper learning in the MMS were the alignment of its educational objectives and founding vision with deeper learning value systems, a school environment and organizational culture highly conducive to deeper learning, an appreciation of the transformative power of deeper learning by the school's community members, and the various approaches to deeper learning which the school had tested, evaluated, adapted, and applied. The findings of this study indicate that the approaches suggested by Fullan et al. (2018) and Mehta and Fine (2019) are proving effective in a low-income rural Cambodian school setting, but with nuanced and appropriately adapted elements, for example, a greater emphasis on promoting humanistic value systems, local culture, and community as the very arcs of deeper learning. Highlighting the experiences and amplifying

the voices of learners at the MMS, through this study, has allowed these distinctive features to be more clearly recognized.

Despite these successes in promoting deeper learning, however, the school continued to face several challenges, among which were socio-cultural dynamics counter to deeper learning, residual effects of the COVID-19 pandemic shutdowns, human resource limitations, and the absence of critical support structures for students in the school. A discussion of these findings and their implications, further analysis, and a consideration of opportunities for MMS and for the wider community of educators and researchers follows in Chapter 5.

CHAPTER 5

DISCUSSIONS AND RECOMMENDATIONS

Educational reform proponents around the world are making significant gains in furthering deeper learning. They are doing so by using systems-wide approaches that enable students to improve the long-term retention of key lessons, develop critical competencies that they will need for future success, and meaningfully engage and change the world for the common good (Fullan et al., 2018). These systems-wide approaches ensure that powerful learning experiences at the intersection of mastery, identity, and creativity are taken through structured learning frameworks or arcs of learning and reinforced by enabling educational community environments (Mehta & Fine, 2019). They involve adopting appropriate pedagogies, cultivating learning partnerships, ensuring that learning environments are ideal for learning, and leveraging digital technologies (Fullan et al., 2018).

This study was intended to explore deeper learning in MMS, a K-12 school for students from low-income backgrounds in rural Cambodia; to highlight effective approaches being employed to promote deeper learning there; and to note key challenges and opportunities for doing so at the time of this research. My primary question for this research was “What does a deeper-learning school look like in Cambodia today?” Secondary questions were “What approaches to deeper learning are employed there?”, “Why is deep learning deemed important by teachers, administrators, and students there?”, and “What challenges and opportunities do they face in promoting deeper learning?”

The findings of this study indicated that the approaches suggested by Fullan et al. (2018) and Mehta and Fine (2019) were proving effective in a low-income rural Cambodian school

setting. The school where this case study was conducted had established and maintained a school environment conducive to deeper learning and was applying approaches to deeper learning that correspond to the categories in the literature, but with nuanced and appropriately adapted elements, for example a greater emphasis on promoting humanistic values systems, local culture, and community as the very arcs of learning. By highlighting the experiences and amplifying the voices of learners at the MMS, this study, has made these distinctive features more clearly recognizable.

Findings of this study also helped to surface reasons why some Cambodian students, teachers, and school administrators believe that promoting deeper learning is challenging, but also why it remains worth pursuing despite the difficulties faced. Ultimately, deeper learning is seen not only as formative but as *transformative* for the persons, lives, and societal trajectories of deeper learning communities. In this chapter, I shall expound on some implications of these findings that may be of consequence to educators and researchers in this field. Finally, in this chapter, I shall also expound on opportunities for deeper learning that this case study has brought into focus.

Significance of the Study

This study contributed to the limited body of empirical research that can help to shape reform policies for Cambodian education systems in support of deeper learning. Findings of this study may help teachers and school administrators identify culturally sensitive ways they can modify pedagogies, school environments, and administrative policies toward improving student achievement and school performance.

Thus far, recent literature on Cambodian basic educational reform has been scarce and limited mainly to pedagogy and teacher training (Berkvens, 2017; King, 2020; Ogisu, 2014, 2022; Tan, 2010; Tandon & Fukao, 2015), primary school leadership (Kheang et al., 2018), and the persistent and far-reaching negative effects of the privatization of education through the practice of *riyen kua* or extra classes (Brehm, 2021). None of the studies focuses on wider systems-approaches to understanding and implementing effective reforms. Fullan et al. (2018) emphasize the importance not only of pedagogies, but also of learning partnerships, leveraging digital technologies, and enabling learning environments in deeper learning designs. Mehta and Fine (2019) have highlighted the components and the wider organizational and community cultures that support deeper learning. This study explored these aspects of promoting deeper learning in the Cambodian context.

As many educators such as those in Cambodia continue to grapple with the widespread over-reliance on rote learning practices in mainstream school systems, it will be critical for them to apply reform approaches which are context-appropriate and culturally sensitive. This case study of how deeper learning was being promoted in MMS sought to explore what these approaches might look like and how they are working for Cambodian schoolchildren. MMS is a K-12 mission school that caters primarily to students from low and ultra-low-income families in a rural agricultural community in Cambodia. The school was founded by a Catholic order with extensive global experience in running schools and providing transformative education and whose explicit intention was to help improve the quality of education in Cambodia and to challenge the over-reliance on the use of traditional rote learning practices of Cambodian

schoolteachers. The experiences of MMS can therefore inform the efforts to promote deeper learning in similar school contexts.

Restatement of Research Questions

The primary question of this research was, “What does a deeper-learning school look like in Cambodia today?” Toward this end I sought to answer the following secondary questions:

- How is deeper learning effectively promoted in MMS?
- Why is deeper learning important to teachers, administrators, and students of MMS?
- What opportunities and challenges does MMS face in promoting deeper learning?

As I discuss and synthesize the case study findings in this final chapter, I will be noting relationships of various observations derived from this research with various studies in the literature on deeper learning and on Cambodian education reform. I will also be making recommendations by highlighting opportunities for deeper learning in MMS, for educational reform proponents in Cambodia, and for researchers who intend to pursue further studies on this topic.

Summary Discussion on the Findings

The findings of this study indicate that the experiences of students, teachers, and administrators of MMS in overcoming the deeply entrenched use of rote learning practices in Cambodia correspond to several deeper-learning categories employed by global educational reform movements. These include the conceptual frameworks of the NPDL (Fullan et al., 2014), as well as those of Mehta & Fine (2019). The MMS’s understanding of *collaboration* and *critical thinking* as core educational objectives were identical to NPDL’s deeper learning goals. Other

educational objectives and core values of the MMS such as *conscience, compassion, commitment* and *being persons for others* are directly aligned with the deeper learning competencies of *character* and *citizenship* identified by Fullan et al. (2018). The school's valuing of Khmer culture and reflective capacity / spirituality are aligned with the category of *identity*, which, according to Mehta and Fine (2019), is one of the three critical components that make for powerful learning experiences; *academic competence* and *leadership skills* are aligned with *mastery* (the second critical component); and the consistent use of resourceful, creative pathways to learning, artistic expression (through Khmer Dance and Music), and project or action-based learning (e.g., tree planting, clean-ups, STEM exhibitions) with *creativity* (the third). The various practices by which MMS was promoting deeper learning covered all the elements of deeper learning design (i.e., enabling environments, pedagogies, partnerships, and leveraging digital technologies) (Fullan et al., 2018) and were activating mastery, identity, creativity, and community as arcs of learning, as Mehta and Fine (2019) had conceived.

As regards deeper learning practices, there were 15 that I identified in this study which were transforming the educational experiences of secondary school children in rural Cambodia.

Under each of the deeper learning design elements, the 15 were these:

PEDAGOGICAL PRACTICES

1. Mindfulness Meditation Exercises
2. "Teachers Talk Less" Policy (Towards Student-centered Learning)
3. School-wide Academic Debates
4. Integrated Environmental Campaigns
5. A Praxis-Oriented Pedagogical Paradigm
6. Extra-curricular Programming

LEARNING PARTNERSHIPS

7. Traditional Khmer Orchestral Music and Dance Classes
8. Service-Learning Activities
9. A Student Leader Program

10. Strengthening Parent Involvement and Partnerships
11. Student Mentoring/ Teaching Programs

LEARNING ENVIRONMENTS

12. Value-norming
13. Purposeful Design of Learning Spaces

LEVERAGING DIGITAL

14. Upgrading and Maintaining Digital Facilities
15. Incorporating Digital Applications to Instruction, Engagement and Learning

These approaches strengthened student agency and leadership abilities, cultivated reflexivity, developed critical thinking abilities, increased engagement and collaboration, deepened the sense of personal and collective identities, and inspired positive action to address locally such global problems as climate change and growing inequity. Through these practices, MMS was providing students powerful learning experiences in ways seldom seen in other secondary schools.

As illustrated in Chapter 4, these 15 approaches engaged members of the school community in ways that were consistent with the characteristic patterns of deeper learning and deeper teaching suggested by Fullan et al. (2018), as well as with the initial form of a deeper learning theory suggested by Mehta and Fine (2019). These individual practices, however, were not disparate, unrelated activities, but were bound together and made effective by a school culture and various aspects of the school ethos that disposed the community to deeper learning. The school culture and ethos are what served to activate an enabling environment and to create the arcs or super-structures necessary for deeper learning. This study identified three notable aspects of this ethos, namely, that the school consistently engaged the students on the level of eco-humanistic values, promoted love for Khmer culture and identity, and furthered innovative and creative paths toward learning beyond books and classrooms. Altogether, the school

community members created an atmosphere of joy, respect, safety, and solidarity and of being a family.

Most of these practices and school cultures, although commonplace in other country contexts, are not commonly employed in Cambodian public schools. That these practices and cultures were positively transforming the educational experiences of Cambodian secondary school students in this study indicates that many of these practices will be worth further research and potentially worth adopting in Cambodian public schools. Adopting these approaches may help to boost the education community's efforts to move from standard, across-the-board reliance on rote-learning.

Out of these 15 practices, only three required substantial capital outlay from the MMS administration. These were *upgrading digital facilities* (the school had to fund-raise to be able to install LCD projectors and laptop computers in every classroom, as well as to have a sufficient number of desktop computers in the computer lab and stable Wi-Fi in the school buildings) and the *Khmer Music and Dance classes* (it had cost the school almost USD 5,000 to procure the Khmer musical instruments and traditional dance costumes) and the *purposeful design of learning spaces* (granted that MMS had 19 hectares of property to work with). The other twelve practices and school policies that were found to be effective in MMS do not involve heavy capital investment. Promoting these practices mainly requires professional development (i.e., training teachers), for which there are already several sources of funding, both private and public, in Cambodia. If these resources are properly channeled towards professional development for deeper teaching, these approaches to deeper learning can be made replicable for public mainstream education.

To be effective, however, what these practices also require is the commitment and determination of school leaders to combat prevailing, culturally embedded school practices that are counter to the spirit of deeper learning. The biggest challenges to promoting deeper learning in Cambodian schools are these deep-seated, historically conditioned cultural dynamics. Extensive studies in the literature detail the negative effects of *riyen kua*, encouraged cheating, the value given to hierarchical status (based on age and seniority in the educational practice), the abuse of the educational system as a tool for economic gain by teachers and school officials, and the low regard for the value of education by families in rural agricultural communities. This study confirms that even in a privately run mission school in rural Cambodia these dynamics remain formidable blocks to promoting deeper learning. Despite MMS having successfully shielded students from these realities in the first years of its operations, the enclosed bubble of MMS's ideal education environment is becoming more and more porous in recent years. MMS students in Grades 9 and 12, for example, are being more and more exposed to the corruption-laden system of national exams because cheating is still allowed by official proctors and because students who are tutored for a fee (through *riyen kua*) by teachers who have access to exam contents have much higher chances of passing. The stark differences in values of the public-school teachers who are hired as part-time teachers at MMS (discussed in detail in Chapter 4) further illustrates how porous the school environment's boundaries have become. Many of the values counter to deeper learning that the school was founded to protect its students from were already present there at the time of this study.

Over the past decade, the Cambodian MoEYS has tried to combat these negative values and practices with top-down policy approaches. Recent studies, however, have suggested that

there has been little improvement or, worse, further deterioration of conditions in the public school system and that the top-down approaches towards educational reform are not working (Brehm, 2021; Brehm & Aktas, 2019; King, 2020; Ogisu, 2022). This study has illustrated how school leaders and teachers of grassroots communities themselves can step-up to combat these cultures. School communities need not wait for the system to be rid of counterproductive cultures before beginning the work towards promoting deeper learning. Rather, promoting these deeper learning practices and allowing them to begin to take root will be a vital part of the counter-cultural movement towards improving the quality of education in Cambodia today.

This study also identified several challenges related to school administration that were directly or indirectly affecting the work for deeper learning. The lack of training on SCL approaches and the lack of teachers with specialized skills or areas of study (e.g., Khmer Music and Dance) directly impacted opportunities to promote deeper learning in MMS. On the other hand, the growing school population, problems that ensued from the COVID-19 pandemic, the absence of critical support structures (e.g., a student handbook, an appeals process and committee, a school counsellor, and a mental health or psycho-emotional development program) indirectly impacted deeper learning, insofar as these problems made it difficult to run the school, with or without a deeper learning mindset. Strong and effective school leadership and a healthy school environment that enables collaboration and prompt effective action will be necessary to address these problems that remain blocks to promoting deeper learning.

Opportunities for Deeper Learning

In this section I highlight the opportunities for promoting Deeper Learning in the MMS, as well as in mainstream Cambodian public schools. These include engaging the part-time public school teachers as partners for deeper learning, enhancing student teaching and mentoring programs, highlighting the natural and community-oriented features of the school, strengthening national and international networks for deeper learning, leveraging the school's positive reputation, strengthening recruitment processes for teachers, applying such other deeper learning pedagogical approaches as meta-learning, developing deeper-learning dispositions, and offering apprenticeship programs. These are opportunities making it possible for school leaders, teachers, and students to grow in deeper learning. I have organized this section in order of priority, with the most urgent concerns (e.g., teacher training and recruitment) foremost in the discussion. Following these concerns are opportunities that involve enhancing programs or highlighting features already present in the school, but which are overlooked (e.g., the school's natural features and the local community orientation.) These require low input but have high potential impact for the school and will, therefore, be worth engaging as soon as possible. Lastly, I expound on opportunities for which the school will require more long-term planning and preparation, but which will eventually be worth engaging (e.g., promoting meta-learning, deeper learning dispositions, strengthening networks, etc.)

Engaging Part-time Public-school Teachers as Partners for Deeper Learning

MMS contracts part-time teachers also teaching in public schools to fulfill the required number of classroom hours stipulated by the Ministry of Education, since it is not yet financially capable of employing a larger full-time teacher complement. These teachers from the local

public schools appreciate the opportunity to earn extra income and are open to teaching at MMS, regardless of whether or not they share the school's core values. These part-time teachers, however, do not get the same training and formation given to full-time teachers of the MMS and therefore have not been given the knowledge to understand or appreciate the school's mission as much as the full-time teachers do.

There is an opportunity at MMS to engage these part-time teachers not solely as human resources who help fulfill the mandatory class hours for the school, but as partners in the formative mission of the school and collaborators in furthering deeper learning goals. With proper formation and professional development, these teachers will be more effective teachers not only in MMS but also in the various public schools where they teach. In those schools, they can be agents for change who foster value-systems related to deeper learning beyond the limited circle of MMS students.

In recruiting and engaging these teachers, there is an opportunity to employ the findings of this study which has shed some light on the perceived significance of deeper learning for Cambodian teachers and students. Participants of this study articulated how deeper learning was key to enabling students to address grave social concerns, develop well rounded youth and well-balanced value systems, fulfill aspirational goals, transmit positive social values, and overcome cognitive biases. These ways that Cambodian participants in the study perceived the benefits of deeper learning are powerful persuasion points that may help in recruiting and engaging teachers and in rationalizing school reforms that promote deeper learning.

Strengthening Recruitment and Screening Processes for Teachers

Experiences of the Human Resources department of MMS in recruiting and training teachers over almost a decade of its operations are also shedding light on opportunities to strengthen these processes in support of deeper learning. One HR staff member spoke of how he had observed clear differences between teachers who simply considered teaching as a source of income and those who were themselves mission-driven. Those who were mission-driven were more adaptable and willing to make sacrifices to help the MMS attain its goals. Mr. Bop said,

I think there are two kinds of people who come to work here: the ones who come just to earn a living and those who come to help. To help in the mission. Even if the salaries here are small, [the latter] make the sacrifice. This is something that we can really see.

When I asked whether or not the school has been successful in converting teachers of the former kind to become more like the latter, he said he felt that he and the school found this very difficult and that they had thus far “failed” at doing this. Through these observations, the HR department was learning that, if a person does not have the heart for the mission of teaching to begin with, it is almost impossible to form that person for deeper teaching.

As MMS expands its full-time teacher complement, there is an opportunity to adjust its recruitment and screening strategies based on the experience of the school’s Human Resources department. Based on the observations of the HR Director, hiring teachers who exhibit a commitment to the MMS’s educational objectives and mission will be more beneficial for MMS’s deeper learning goals.

Students Teaching Students

MMS students appreciate the opportunity to become teachers and mentors themselves. This happens when there are opportunities for them to teach younger students of MMS or of

public-school partners of MMS's various outreach programs. Through these outreach programs, MMS students themselves become resource-persons and advocates, for example, for environmental issues. These activities allow them to speak in front of large student audiences and to deliver mini lectures that they have prepared, complete with visual aids or Power Point slides. Participants of this study noted how having to teach others helped them understanding lessons more deeply and remember them more easily.

These teaching engagements for students, however, are mostly one-time engagements with little or no follow-through and processing. They are, in themselves, what Mehta and Fine (2019) referred to as *powerful learning experiences*, but which the school does not maximize by taking them through arcs of learning. As such, there is an opportunity in the MMS practice to formalize these mentoring or outreach programs into a school club or a more structured service program and to further fuel the student's love for teaching. School organizations can also serve as support communities for those who share this interest and can be the ground in which the passion for teaching and for research can be nurtured.

Highlighting Special Features of the School

There are opportunities to highlight several features that already exist in the school but which are not being fully maximized for deeper learning. These include the school's natural environment and ecology, community partnerships, and orientation towards the needs of the local community.

Natural Environment. The majority of participants mentioned various ecology-related features of MMS as part of what they appreciated most there. Interestingly, however, none of the participants mentioned anything in detail about the several varieties of endangered Cambodian

hardwood tree species in the campus, which I later discovered from conversations with some of the staff members who planted those trees. There are on campus no posted tree identifiers to help students learn either the common or scientific names of the trees. During my stay in MMS I also came across several local wildlife species (of snakes, giant centipedes, rarely seen insects, and migratory birds), but the school had no existing catalogue of these species and no means to display or highlight the biodiversity there. Some student participants also mentioned their appreciation of the proximity to the school of the nearby river. The school was built on the river's banks, and the two campus football fields serve as flood catchment basins during the rainy season when the river swells and the river overflows, enriching the soil with nutrients from the river system.

There is an opportunity for MMS to use these natural features of the school to deepen the school community's love for the environment. Already, this concern for the environment is upheld strongly as one of the school's nine core values, but the lessons can further be enriched. The importance of biodiversity, river-land relationships, and the occurrence and patterns of flooding are lessons, for example, that will help to expand the community's understanding of the fragile balance of ecology. Highlighting the school's natural features can also be an opportunity to foster scientific mindsets and the value of research that will fuel deeper learning.

Community Partnerships. The MMS community has several notable partnerships that help propel the mission of the school. Several international volunteers, for example, served as teachers and administrators there. Since the school's establishment, international volunteers have played crucial roles in the pioneering efforts of the school. Some are seasoned teachers and school administrators, while some are younger educators with undergraduate backgrounds in

education. They come from such various countries as Australia, Ireland, France, Korea, the Philippines, and Hong Kong. As volunteers, they are not given a salary by the school, but instead are supported with a minimal living allowance by partner organizations that sponsor their service year/s. Their contract terms run for at least two to three years, with the first year of their service primarily dedicated to learning the Khmer language, observing classes, and assisting full-time faculty. That these volunteers come to serve in MMS entails many sacrifices on their part. They leave the comforts of home and family and their mother cultures and tongues and have to adjust to the extreme local weather conditions and spartan living in the school housing facilities. The school (except for the computer laboratory) and faculty living facilities have no air-conditioning units, for example, so teachers simply endure having to teach through the months of March to May, when temperatures sometimes go up to 42°C (107 °F) or through the extremely humid months of June to August. Other than having to adjust to the weather, adapting to the food and the language is also difficult for some volunteers.

While several participants highlighted their appreciation for these volunteers, what they specifically mentioned was the opportunity to practice their English language skills with these international volunteers. None of the participants mentioned being inspired by their example of being persons for others who made sacrifices for the school and for the students. There is an opportunity at MMS to highlight the presence of volunteers as a way to promote service, volunteerism, and the core value of being persons for others more explicitly. This can be done by creating venues through which stories of volunteers are featured and by facilitating more structured interactions between the volunteers and the students in order to enrich cultural learning beyond books and classroom settings.

The opportunity to highlight key partnerships is also seen in the school's efforts toward parent engagement. Recently, the school director successfully organized the Parent Association of MMS. The Parent Association helped to raise funds that provided critical support for a road-filling project. This project alleviated the problem of children having to wade (or take a boat) through flood waters on the main roadway access outside the main gate of the school during the rainy season. Some parents of higher income brackets have also volunteered to sponsor school fees for some students who were in danger of dropping out due to financial difficulties. Many of these students experienced greater vulnerability after their parents lost their jobs during the COVID-19 pandemic.

Through this study, I found that these ways that the Parent Association had begun to help the school were not highlighted and were not well known by the students. Highlighting how the school was engaging parental support and involvement could help to deepen the student's understanding and appreciation of the core value of collaboration and how this plays out concretely in addressing community problems. As discussed in further detail in Chapter 4, deeply teaching collaboration is empowering, encourages cooperation across difference, imparts necessary soft skills, and allows communities to accomplish more. Highlighting the partnerships that have been key to the successes at MMS will be a vital way to deepen these lessons.

Local Community Orientation. From its beginnings, MMS was established with an orientation towards the needs of the local community. This can be seen in the prioritization of initial program offerings, the building construction, and the campus lay-out of MMS. When the school founders were drawing up the plans for the MMS project, they resolved to establish the school in a way that would allow it to serve among the most marginalized youth in Cambodian

society. They determined a) that the school would be set up in a rural, socio-economically under-resourced area of the country; b) that it would cater primarily to children from socio-economically disadvantaged families; and c) that a major component of the school project would be a Community Learning Center (CLC) which would provide non-formal education programs for out of school youth, based on the CLC model proposed by the UNESCO (UNESCO Bangkok, 2003). The CLC was something that the Cambodian Ministry of Education, Youth and Sports had been promoting for over a decade by the time of the establishment of MMS.

When construction began on the MMS campus, the first building to be put up was the Community Learning Center. Among the first programs that the school offered were computer and literacy classes for youth of that local community who had dropped out of school. Around the time of the CLC's construction, the school project manager conducted a survey of all the households in the two villages adjacent to the school to determine more clearly the number of out of school youth in the area. Through this survey, the MMS founders were surprised to find that there was a remarkably large number of children not yet in school (almost 900 children, ages 0-5, from the two villages alone.) They also found that large numbers of young people had already left for neighboring Thailand in search of livelihood or employment. Most of these youths were contracted as day laborers in construction sites in the developing urban centers there. The school's programs have since been tailored in light of these demographics.

When the master plan of the school was being finalized, the school's second football field was purposefully located by the entrance of the school, facing the residential area adjacent to the school's frontage. This site was chosen so that the school could easily conduct their events which included the non-enrolled members of the community (e.g., Christmas parties and Khmer New

Year celebrations) to help make the non-enrolled students of the community feel that this school was theirs, too.

Interestingly, however, no mention of the Community Learning Center (CLC) was made by any of the participants in this study. This suggests a possible disconnect between the MMS students and teachers and this core program of the school, in which few students and faculty are able to participate. The literature on deeper learning emphasizes that strengthening connections of lessons to real-world concerns and to addressing community needs is a highly effective strategy in promoting deeper learning (Fullan et al., 2018). There is, therefore, an opportunity to highlight the work of the school through the CLC. MMS can maximize its CLC program to promote deeper learning among the full-time students of MMS by leveraging the experiences, exposure, lessons, and witnessing to the core values of being persons for others that the program affords the school.

Promoting Meta-Learning

Several of the students who participated in this study exhibited signs of meta-learning by being able to describe not only *what* they had learned but how they were learning and by identifying what helped and did not help them in the learning process. When asked, for example, about the school-wide debate, Rithy (G11, M, 18), who was leader of the affirmative team debating on the proposition that “the role of the youth was key in addressing the alarming growth of the problem of drug addiction”, cited that, in preparing for the debate, he had to master much information pertaining to the national situation, to learn to challenge and be challenged by his colleagues during the practice sessions and during the debate itself, and to learn to use the proper language for academic discourse. When I asked Reaksmeiy (G11, F, 16) who was merely a

member of the audience, on the other hand, about what she thought of the debate, she said she found the topic and the discussions evocative, that she learned to listen attentively, following each speaker's train of thought, to track the direction of ideas presented, to analyze the strength or weakness of the arguments, and to weigh the arguments speakers used against their own thoughts and beliefs. In both instances these students were able to communicate clearly signs of meta-learning.

Interestingly, however, none of the teachers or administrators interviewed for this study made mention of the importance of meta-learning. None of the teachers or administrators gave any indication of conscious or intentional efforts to promote meta-learning at MMS. The literature on deeper learning, from the pioneering studies of (Marton & Säljö, 1976) to the present more developed frameworks used in this study (Fullan et al., 2018; Mehta & Fine, 2019), has consistently identified meta-learning as among the most effective pathways to deeper learning. This presents an opportunity for MMS to look more deeply at meta-learning processes deemed effective by its students and to train teachers in meta-learning literacy and pedagogy in order to advance a greater awareness among students about deeper listening and deeper learning practices.

Fostering Deeper Learning Dispositions

An area of deeper learning on which this study failed to shed more light is how deeper learning dispositions were being cultivated in the Cambodian setting. (Costa & Kallick, 2015) have identified at least 16 dispositions as critical pathways to deeper learning (discussed in Chapter 2), but very few of the participants could readily identify what key dispositions toward deeper learning they thought they were fostering or practicing in MMS. Only Nekru Rotha and

Nekru Bopha, for example, were able to name the importance of teaching students about commitment or persistence. Only Nekru Rotha said that it was important for teachers to impart, by example, the openness to continuing or life-long learning. Only Nekru Bopha made mention of developing the attentive listening skills of students, and only Principal Lina made mention of fostering innovation, creativity, and imagination as important.

Most of the other dispositions that teachers named (e.g., helpfulness, respect, gratitude, love of the environment) were only indirectly related to deeper learning, insofar as they helped to build the sense of community in the school or to further the MMS's core values. However, these values, *per se*, did not necessarily facilitate the processes involved with deeper learning and thus are not necessarily critical pathways to it. On the other hand, there were some other deeper learning dispositions which were evident among the participants in the study (e.g., metacognition, questioning, and problem-posing) but of which participants made no mention when asked about critical dispositions for deeper learning.

There was, therefore, little indication of intentionality regarding forming deeper learning dispositions in MMS. This presents an opportunity for future researchers to look into the topic of how to promote dispositions as critical pathways towards deeper learning in Cambodian school settings. Teachers and administrators at MMS may also seek to experiment with how to infuse enrich their lessons, programs, and pedagogies by centering dispositions of deeper learning. These dispositions include striving for accuracy and precision, responding with wonderment and awe, finding humor, thinking and communicating with clarity and flexibility, and more that the literature identifies.

Promoting Research, Apprenticeship, and an Open Epistemology

Another opportunity for MMS relates to the school's underlying philosophy of knowledge and to the practical aspects of academic research and apprenticeship that are contingent upon it. Principal Lina mentioned that one of the next steps in the curriculum development of the school is to include ways by which students could more deeply learn to do research. The impetus for this was the greater internet accessibility that MMS can now provide, given the recent acquisition of desktop computers sufficient for an entire grade level and several other laptop computers that are available for students to borrow for research purposes. This development provides two foundational opportunities that the literature on deeper learning has highlighted.

Firstly, as MMS moves into making research a part of the curriculum, it may help to consider the importance of the opportunity for apprenticeship, as highlighted by Mehta and Fine (2019). According to Mehta and Fine (2019) deeper learning schools have structures that support not only the retention of content that is to be learned but, more importantly, allow teachers to impart skills, practices, and approaches appropriate to their field of knowledge, such as a craftsman imparts to an apprentice, not just knowledge but the way of knowing and practicing in one's craft. A teacher of biology, for example, teaches not only what research in biology has produced, but how biological research is conducted. Additionally, teaching how to conduct research will also involve teaching the theoretical frameworks employed for such an endeavor. Under the apprenticeship model, that teacher would be accompanying students through the very process of research, possibly through assigned research projects that may take the arc of a whole term.

Secondly, on a deeper level, such a juncture in the school's curriculum development is an opportune time to clearly articulate the school's underlying epistemology and to begin to communicate this to students. *What is truth? How do we come to know the truth? How do we judge that which is truthful from that which is not?* Studies on critical thinking, in particular, those that apply the Reflective Judgment model developed by King and Kitchener (1994), emphasize how problems in the failure to develop the faculties of reflective judgement are epistemologically related (i.e., that those who stubbornly cling to false beliefs despite the glaring data in support of the contrary do so out of a misplaced sense of truthfulness as coming from external authorities, or out of a mistrust of truth in itself as a viable concept.) As MMS develops its program of introducing research to the secondary school students, students in Grades 11 and 12 may be ready for introductory discussions on more philosophical topics that will begin to expose them to the field of epistemology and that will facilitate progress in the development of their critical thinking skills. The literature on this topic has suggested that the transition to adulthood (i.e., 16 to 18 years old) is an appropriate time to introduce such topics (King & Kitchener, 1994, 2004; Kronholm, 1996; Van Tine, 1990). The maturity evidenced by the depth and quality of responses of the respondents in this study who are in this age range aligns well with this conjecture. As such, philosophy, academic research, and apprenticeship have profound potential to further deeper learning in MMS.

Leveraging The Positive Growing Reputation of The School

Several participants in this study reported the positive, growing reputation of MMS based on comments from members of the local community in marketplace settings and the local neighborhood encounters. This can be leveraged to strengthen deeper learning partnerships,

networks and wider-scale initiatives, some of which the school had already initiated prior to COVID-19 closures.

MMS students were praised by these local community members for being respectful and for regularly being of service to the larger community (e.g., in community clean-ups). The school is known for consistently providing assistance to members of the local community experiencing poverty (e.g., through Christmas drives that collect donations from the students, teachers, and parents of the school and channel these to local community members in need). Recently, the school began extending its environmental campaigns to the public schools, whereby MMS students, teachers, and external resource persons give talks and workshops on environmentally friendly household practices. One participant shared that he was enrolled in a Master's in Education program of the local Teacher Training College and that he was surprised and proud to hear of the professors in some of his courses naming MMS as a model school in terms of effective pedagogical practices.

This positive, growing reputation of the school presents an opportunity to promote deeper learning through the attributes or values for which the school is being praised. The follow-through teacher training activities of the school can be designed with particular focus on these positive values. MMS can also leverage its positive reputation by exploring and building-up partnerships with schools and community organizations which now hold the school in positive regard.

Participants in the study mentioned how strengthening ties with partners from both national and international education networks for deeper learning is an opportunity for MMS. MMS is a member of three international networks: one of Catholic schools in the Asia-Pacific

region, one with a global network for popular education with schools in South America and Africa, and one with an international web-based organization that links schools around the world who share the Reflective Pedagogical Paradigm. There is an opportunity to partner with schools in those networks in order to enhance inter-cultural learning, exchange best practices for deeper teaching, and enrich experiences of the MMS students by allowing them to find mentors, mentees, or friends from those other schools.

On the local level, there are public school clusters to which MMS belongs. These school cluster associations can be used to facilitate the exchange of viable teaching practices for deeper learning. In the years prior to the pandemic, pioneering teachers and administrators of MMS already conducted teacher-training sessions for Cambodian teachers from these cluster schools. The teachers and administrators directly involved with those sessions, however, were no longer connected to MMS at the time of this study. Archival records show that those initial efforts were well received and highly appreciated by the teachers, but the pandemic period and the quickly growing population of MMS made it impossible to continue those activities.

As the pandemic period recedes, there is an opportunity to conduct follow-through activities with those teachers, to promote deeper teaching among them, to help them improve their pedagogical practices, and to help MMS learn from what practices are working effectively in the other local schools.

Thus far, I have highlighted several opportunities for the MMS as it moves forward with its deeper learning goals. A summary of these opportunities will be discussed at the end of the next section on parallel discussions and other possibilities for future research.

Parallel Discussions and Possibilities for Future Research

In this closing section, I explore some implications of the findings of this study to related pertinent issues in the literature on deeper learning, Catholic educational values, educational reform in Cambodia, and the role of *community* in the learning process. These discussions will hopefully draw the attention of education researchers seeking to continue the exploration of deeper learning and these related topics.

On the Pursuit of Excellence

The second part of the MMS's vision statement states that the school pursues "*human excellence in learning and teaching* while valuing wisdom and spiritual freedom", in line with its aim to develop the students' capacities "to care for oneself, others and society" (emphasis mine, MMS brochure, 2013). Notably, however, none of the 27 respondents in this study made any mention of the value of the pursuit of excellence in the interviews and focus groups. Some teachers and administrators among the participants admitted that the school was weak in the STEM subjects, that, on some STEM subjects, MMS students lagged behind their contemporaries in public schools, and that the school needed to strengthen the STEM teaching capacities of the teachers here. Despite these weaknesses and the lack of the typical drive for excellence seen in many other Catholic schools, the findings of this study have suggested that deeper learning approaches were working in MMS. Education reformers may therefore find in schools like MMS a viable model for deeper learning approaches in secondary education that do not compromise on equity and inclusion in the name of an exaggerated valuing of excellence.

The literature on the place of academic excellence in Catholic schools has been equivocal. The *pursuit of excellence* has been held in high regard by many Catholic schools

around the world (Grace & O’Keefe, 2007; Toppo, 2007), with some Catholic School Associations, for example in the United States, having asserted the centrality of academic excellence to a Catholic school’s identity (Weitzel-O’Neill & Scheopner Torres, 2011). Studies on Catholic schools in several other country contexts, such as the UK (Gallagher, 2007), Zambia (Carmody, 2007), Israel and Palestine (Khader et al., 2007), however, were more cognizant of how the over-emphasis on academic excellence was in tension with the social justice orientation of a school. Schools that deify academic excellence tended to marginalize less academically gifted students and/or those coming from lower socio-economic classes and of varying abilities (Carmody, 2007; Khader et al., 2007). They also tended to associate academic excellence with standardized grading and ranking systems, thereby strengthening the meritocratic philosophies that uphold market-driven capitalist structures, privileging opportunities for the individual over the common good (Gallagher, 2007). Meanwhile, outside of the Catholic tradition there was a growing number of proponents of educational reform who had emphasized the need to reconsider how the pursuit of excellence was framed and promoted in schools and how it ran counter to equity goals. (deBoer, 2020)

Further research on the pursuit of academic excellence in Catholic schools needs to look more closely at whether this facet is, indeed, an essential part of the Catholicity of schools or is a sign of counter-productive hubris that undermines the socially-just oriented ends of Catholic education.

On the Use of SCL in Cambodia

Noteworthy, also, is the MMS’s use of student-centered learning, a pedagogical framework that the Cambodian Ministry of Education, Youth and Sports has been experimenting

with since the early 2000s and officially promoting since 2007. The effectivity of SCL for the Cambodian context has been questioned by some researchers who express concerns about how aspects of local Cambodian culture are deemed incompatible with this pedagogical approach. In particular, the hierarchical nature of Cambodian society, compounded by the reverential status that teachers attain as wisdom figures, runs counter to SCL, which privileges the student as the center and prime agent of the learning process. (Ogisu, 2018, 2022; Reimer, 2012). Additionally, the Cambodian cultural profile that features a relatively high propensity to avoidance of uncertainty, to acceptance of power differences that they do not necessarily appreciate, and to valuing of collectivist behavior further complicates the adoption of SCL (Berkvens, 2017).

Findings of this study, however, affirm that SCL can be effective in rural Cambodian contexts. Teachers and students who participated in this study shared that ways in which MMS has centered on students and has encouraged teachers to build close family-like ties with the students have not diminished but, rather, have deepened the students' respect for the teachers there. Although MMS did not claim to have completely abandoned the use of rote learning practices (e.g., the use of *riyen sout* for the memorization of multiplication tables or the content of key texts is unavoidable, given the official curriculum requirements of the Cambodian MoEYS, and several teachers are known still to often apply traditional lecture-type classes in the school), the complementary use of SCL practices coupled with the use of powerful learning experiences, cultures, and educational objectives has helped move students towards deeper learning. This integrative strategy is in line with King's (2019) recommendations after studying the prevalence of memorization drills in Cambodian public schools. King argues that these traditional pedagogies need not be demonized, but rather should be recognized as essential parts

of the learning process that need to be built-upon and not demolished by other complementary pedagogies such as SCL. Such an approach also affirms Mehta and Fine's (2019) assertion that SCL alone does not equate to deeper learning and will result in such only with the combination of appropriate elements of pedagogy, cultures, environments, and arcs of learning.

Deeper Learning Frameworks Versus Child Friendly Schools?

As discussed in Chapter 2, officially mandating CFS policies was the Cambodian government's response to pressures from multi-lateral aid organizations like the United Nations which were helping to ensure the protection of the rights of school children in the course of Cambodia's post-war social reconstruction. The CFS model, as promoted by the United Nations, is based on the Conventions on the Rights of a child and was designed specially to address the needs of children in post-war or post-emergency situations. Granted that it has been over 30 years since the recurring civil wars in Cambodia have ended and given the pace at which Cambodian society and the globalized world have changed over the past two decades, the Cambodian government will soon need to expand and further develop educational policies appropriate to the country's changing needs.

This study highlighted that MMS was a safe, protected, student-centered school, with teachers that gave much importance to student voice and criticality, and which fostered respect and solidarity, attributes key to deeper learning in the school. These deeper learning attributes are CFS attributes, as well. Additionally, however, the findings of this study suggest that a school framework like the deeper learning model was providing at MMS more than what CFS has to offer. For example, love for Khmer cultural heritage, care for the environment, and the citizenship that is developed from the service orientation and the aim of becoming persons for

others are all beyond the purview of CFS policy but are well within the educational goals of such a deeper learning school as MMS. The Cambodian MoEYS and other key players in educational development in Cambodia can therefore consider how to develop further its ETL/CFS frameworks in order to accommodate paradigms like those of the deeper learning schools.

A Deeper Look at What Builds Community

Both Fullan et al. (2018) and Mehta and Fine (2019) highlighted how a healthy and robust community life in schools lends to deeper learning for its students. Findings of this study further enrich this understanding by surfacing two elements not emphasized by previous studies: *respect* and *solidarity*. In this study, respect and solidarity were related to, but distinct from, *belongingness* and *collaboration*, both of which have been highlighted by much of the literature. The importance that participants of this study gave to *respect* as an enabling factor for deeper learning was consistent and highly pronounced. Furthermore, this sense of respect, while inclusive of the respect for student's rights, voice, freedom, and agency which some of the previous deeper learning case studies focused on (Martinez & McGrath, 2014; Mehta & Fine, 2019), included an aspect that I suspect was more fundamental, but which made a significant difference to the school atmosphere at MMS. This was the respect for the human person manifested as a respect for the mere presence of that person. That students had a general experience of friendliness and warmth with other students (participants reported that even those from other grade levels who did not know each other tended to greet each other upon arriving in school in the mornings) and that teachers were expected to return or at the very least acknowledge the formal greetings of students and that respect was expected to be shown to

everyone in the school regardless of age, gender, race, or status were manifestations of this fundamental respect.

Solidarity, on the other hand, was a repeated theme to which student participants of this study returned. It was referred to as a *being one with* or a *being deeply connected* or a *being like brothers and sisters with* others in the school community. Compared to *collaboration*, solidarity transcended the utilitarian, functional, or mutually beneficial nature of collaborative efforts. Whereas the focus on *collaboration* often involved developing teamwork and the ability to work together towards shared goals (Fullan & Langworthy, 2014; Pellegrino & Hilton, 2012), solidarity, for the participants in this study, was both an *a priori* sensibility that fueled collaborative efforts and an outcome of those efforts, regardless of success or failure.

The solidarity that was present in the experience of this study's participants also differed from *belongingness*. Whereas belongingness was something students felt towards the school or towards social circles within the school (Fullan et al., 2018), the sense of solidarity seems to be what led students to make proactive efforts to ensure that other students felt that they belonged in MMS. Future research on this area of community and deeper learning can explore these cultural and sociological elements that build up community life and can explore how possible differences between developing country contexts and developed country contexts affect the degree to which values like solidarity and respect play a role in learning.

Defining Roles and Responsibilities for Promoting Deeper Learning

Future research on deeper learning can focus on further clarifying the roles and responsibilities that various members of the school community will have to embrace in promoting and achieving deeper learning goals. Given the breadth of a systems-wide approach to

studying deeper learning, the findings of this research helped to surface some of the ways by which various stakeholders contributed to deeper learning. In this final section, I shall summarize these as roles and responsibilities, in light of the conceptual frameworks for deeper learning employed in this study.

Based on Fullan et al.'s (2018) elements of deeper learning design and Mehta and Fine's (2019) theory of deeper learning that looks at mastery-identity-creativity vis-à-vis arcs of learning and iterative reinforcement in multi-variate community settings, findings of this study initially point to the following key roles and responsibilities of education stakeholders:

For Teachers—to provide powerful learning experiences at the intersection of mastery, identity, and creativity and to facilitate how students can carry these forward through arcs of learning; to design, scaffold, and enable arcs of learning through which student experiences and reflections are brought to deeper learning; to further an awareness and appreciation of these arcs of learning by highlighting them at key milestone moments of the learning process; to experiment and learn from various pedagogies that support deeper learning; to leverage digital technologies as much as possible in support of deeper learning; to cultivate partnerships with students, parents, and community members who can directly be involved in powerful learning experiences of the students; to get to know their students and to establish bonds of trust, respect, and solidarity among the students;

For Students—to be responsible for *mastery* (through rigorous approaches that ensure a thorough understanding of and ability to re-articulate subject matter presented); *reflection* (that deepens one's sense of identity and highlights the connection of lessons to personal realities and community concerns); and *creativity* (that propels students to make or do something spurred by

the learning); to hone one's sense of collaboration, communication, critical thinking, creativity, citizenship, and character through the multivarious ways provided by the school; to develop one's sense of love for learning and the desire and disposition to be a life-long learner;

For Administrators—to create and maintain structures that allow learning within the school to connect to real-world concerns of the wider community; to be beacons of deeper learning value-systems; to supervise the maintenance of environmental factors that lend to deeper learning; to ensure the professional development of teachers towards student-centered learning, deeper teaching, and DL measurement; to be lead-learners in determining the appropriate and necessary value-systems and core competencies to be developed by deeper learning; to monitor and measure the progress of the use of deeper learning design (i.e., adapting pedagogies, cultivating partnerships, leveraging digital resources, and providing enabling environments); to ensure the availability of digital infrastructure that teachers and students can employ for deeper learning;

For All Members of the School Community—to cultivate deeper learning values and dispositions, thereby enabling their school environments towards forming life-long learners; to model deeper learning approaches in decision making and solution-seeking for problems affecting the school community.

For the Members of the Wider Community—to include school officials and student representatives in discussions and deliberations on community concerns so that the school's community members can be engaged in addressing them and so that school leaders can include these concerns in developing deeper learning programming and curricula for the students.

Through further clarifying and deepening the understanding of these roles and responsibilities, future research will help to operationalize how schools can transition towards more effectively promoting deeper learning.

Again, my general recommendations for practice and future research are as follows:

For MMS

1. To address the lack of critical support structures for student well-being and learning (e.g., student handbook, counselling programs, and appeals committees)
2. To engage part-time teachers as partners in deeper learning and not just as stop-gaps
3. To strengthen the recruitment and screening processes for new teachers
4. To strengthen the school's student teaching and mentoring programs
5. To highlight the school's natural environmental features for deeper learning
6. To leverage the community orientation of the school towards deeper learning for all MMS students
7. To further leverage community partnerships (e.g., with parents, international volunteers, Buddhist monks) towards enriching student learning experiences
8. To promote meta-learning more explicitly
9. To explore how to foster learning dispositions as pathways to deeper learning
10. To provide instruction on academic research and philosophy in the senior high school
11. To leverage the school's growing reputation by strengthening local and global partnerships and networks for deeper learning

For Future Researchers

1. To explore deeper learning further in other marginalized communities
2. To explore how to foster deeper learning dispositions in non-Western settings
3. To investigate further the practice of SCL in Cambodia
4. To explore the various aspects of community life that enable deeper learning
5. To clarify roles and responsibilities of the learning community members and stakeholders in promoting deeper learning
6. To re-examine the place of *excellence* in deeper learning value systems

Conclusion: Toward a Theory of Knowledge in Deeper Learning

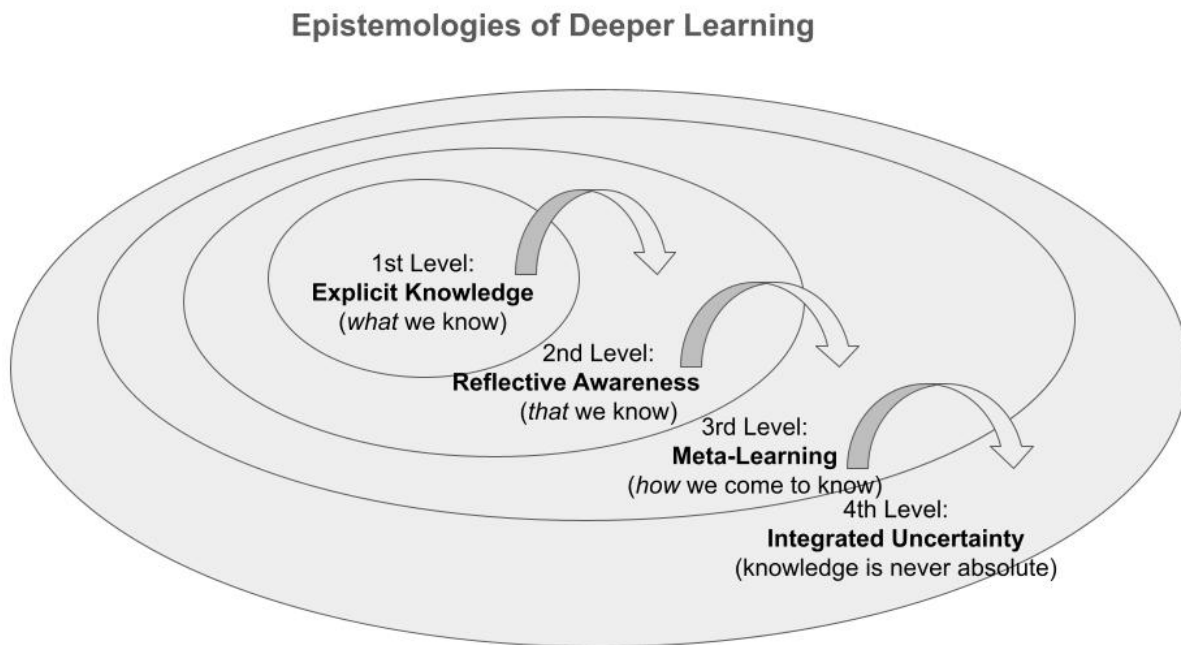
This exploration of deeper learning led me to ponder various levels of knowing that learners engage. The responses of participants in this study loosely illustrated four levels of knowing which I here propose as Epistemologies of Deeper Learning. These are: (a) explicit knowledge; (b) reflective awareness; (c) meta-learning; and (d) integrated uncertainty. Explicit knowledge results from the learner's awareness of *what* one knows; meta-cognition results from the awareness *that* we know; meta-learning, from the awareness of *how* we come to know, or how we come to *learn*; and integrated uncertainty from the awareness that we cannot *absolutely* know. Each successive level of knowing deepens and broadens one's personal epistemology (see Figure 12).

The most basic of these levels is the level of explicit knowledge or the awareness of what we know. This consists of information and knowledge that we have studied, learned, remember, and can articulate. Rote memorization, basic comprehension, and the activation of previously acquired knowledge are cognitive processes engaged on this level. MMS, as discussed in the

previous subsections, did not seek to eradicate completely the use of rote memorization practices, but rather, to build on these in furthering deeper learning.

Figure 12

Furthering a Theory of Epistemologies of Deeper Learning



The second level of knowing is that which involves meta-cognition: to know *that* we know. This involves the learner becoming more aware of the self that is a learner or the self that is learning through the cognitive process of reflection. MMS engaged students with repeated occasions for reflection: the use of mindfulness meditation practices, pedagogies that employ Socratic questioning, questions that allow students to ponder real-life applications of the lessons, and ways to connect discussions and philosophical questions to lived experiences.

The third level of knowing involves *meta-learning*: an awareness of how we come to know or how we come to learn. This level of knowing affords learners awareness, insight, and greater control of the learning processes, enabling the learner to be effectively engaged in

learning. Several participants in this study, upon being asked what was helpful for them to learn lessons taught in MMS more deeply, were able to articulate factors that allowed them to retain lessons, find pleasure in the learning process, and allow new knowledge to be transformative for them and the world around them.

The fourth and deepest level of knowing involves being able to reconcile our capacity for knowledge with the impossibility of absolute certainty of the truthfulness of what we know. To know that we do not know involves a learner's struggle to learn to be comfortable with uncertainty. This reconciling oneself with uncertainty happens in a way that does not lead one to desire to abandon the learning enterprise altogether but, rather, allows one to learn to love the very process of learning even more. Arriving at this broadest and deepest of epistemological stances is consistent with the deeper learning goal of forming life-long learners (Fullan et al., 2018); the highest developmental level of the complex form of critical thinking called Reflective Judgment (King & Kitchener, 1994); and the Critical Realist approach (Bhaskar 1975 & 1979, as cited in Porpora, 2015) which, as mentioned in Chapter 1, is the meta-theory that framed this entire study.

Coming to terms with the precariousness of any form of certainty humbles and transforms learners from simply wanting to acquire as much knowledge as possible, to being open to learning as a life-long process. Uncertainty is also what leads learners to understand the need, when faced with new data, to re-evaluate the beliefs to which one ascribes. Students who participated in this study exhibited this level of knowing when they spoke in intelligent but uncertain terms while considering alternative explanations or probed the causalities involved in the changes they were experiencing in the school. Teachers and administrators also exhibited this

in their willingness to break from their old pedagogies or philosophies, to experiment with new ways of engaging students, and to become learners again themselves, despite the risk and vulnerability that this entailed for them in their native culture.

For educators, the task of promoting deeper learning and forming life-long learners, then, is to scaffold arcs of learning that will guide students through these levels or stages of knowing. Beginning from the most basic stage of explicit knowledge in the earlier school years, to developing the reflective capacities of the students, perhaps beginning in the middle school, and finally to honing their meta-learning skills and to introducing them to epistemology in the final years of high school, with a view towards setting the foundation for integrated uncertainty, which can be attained more fully perhaps in the college years. These arcs of learning will involve introducing and developing the associated skills of these ways of knowing at developmentally appropriate periods of the cognitive development of students. To mature as a deep learner is to progress through these levels in stages and to hone the skills associated with each of these levels progressively and cumulatively.

As a final summarizing illustration, each of the opportunities for deeper learning highlighted in this chapter corresponds to ways by which MMS leaders can move the school community from one level to the next. Highlighting special features of the school, strengthening student-teaching programs, and leveraging the growing positive reputation of the school, for example, are all ways by which individual members of the school community or the MMS community as a whole will come to a greater reflexive awareness of its collective identity and giftedness as a community of learners. Reflexively knowing *that* they know allows them to ask, “What, then? What can we do with *what we know* and *what we know of who we are*?” Such

reflection spurs deeper creative engagements. Through student teaching programs, learners make more of their knowledge by sharing it with others. Aspects of the school's identity (i.e., of what the school knows of itself) are highlighted to facilitate deeper learning. These opportunities, therefore, are ways to move the school from the first level of knowing, focused on Explicit Knowledge, to the second level of Reflective Awareness.

Likewise, engaging the part-time teachers as partners in deeper learning, strengthening recruitment and screening processes, and promoting meta-learning approaches for students are ways to move the community from the second level of reflective awareness to the third level of Meta-Learning. These opportunities are ways by which the school can increasingly become a learning organization, with its members becoming more cognizant of and able to leverage processes that help with deeper learning and deeper teaching in the school. Meta-learning turns crises into opportunities—opportunities to learn to become better learners. The problems the school faced as regards conflicting value systems of part-time teachers can illustrate this, if MMS can successfully leverage what it has learned from these challenges.

Finally, fostering deeper learning dispositions, promoting research and open epistemologies, and strengthening national and international networks that support deeper learning are all ways by which to move the school to the deepest level of knowing, that of integrated uncertainty. Proper dispositions will enable learners to integrate uncertainty and not to fear it. The rigor of research and open epistemologies will guide and strengthen this integration. The need to connect to wider networks will be spurred by the belief that there will always be more to know and to learn from the experiences of other schools.

The proposed epistemologies of deeper learning apply not only to individual learners but to schools as learning organizations. Promoting deeper learning will therefore entail approaches that address the learning needs of individuals, moving them toward greater reflective awareness, meta-learning, and integrated uncertainty, while at the same time effecting organizational changes that move entire learning communities in the same direction.

This exploration of deeper learning has given us a picture of what a school where deeper learning is fostered looks like in a country context like Cambodia's today. The school's organizational culture, emotional atmosphere, physical environment and quality of relationships impact learning. The kind of learning that allows students to engage the world and change the world is valued for being transformative of the life-trajectories of the school's community members and the communities to which they belong. This valuing, in turn, becomes a powerful motivation for members of the school community to stay committed to the school's educational goals and core values. These core values function as arcs or as scaffolds to the architecture of deeper learning there. Although there remain several blocks to the path of deeper learning ahead for the MMS, there are also several opportunities for furthering the cause of deeper learning and for securing the gains the MMS has already achieved.

In addition to fulfilling the purpose of this research, this study also illuminated possibilities for educational innovation in a low-income, developing country context. Despite minimal resources and the impoverished backgrounds of the members of the MMS, the school was able to leverage systems-wide approaches, local culture, humanistic values, and a sense of community to improve the educational experiences of its students. Lastly, the findings of this

study generated yet another way to view deeper learning and deeper learning goals through a theory of knowledge in deeper learning.

EPILOGUE

The term *deeper learning* presents several implicit imperatives to the learner: to foster a healthy distrust for the superficial, to seek out what is good and true in the depths of authenticity, and to stand humbly and inquisitively before the immensity of truth. It is befitting of those who believe that the goal of education is not a definitive end or a terminal state of the learner, but, rather, an openness to the challenge of engaging in life-long learning. Participants of this study showed me glimpses of what makes such an openness possible: *a community that enables and inspires, the transformative and humanizing effects which make deeper learning worthwhile, the hope and richness that only depth can offer, a love for learning that is generated when learners invest themselves generously to the learning enterprise, and the promise of a more just and equitable world that deeper learning puts within greater reach.*

Among my hopes, therefore, is that this study, as well as future research that may stem from it, helps educators continue to inspire and enact all of the above; that further explorations of deeper learning can help school communities in their search for just and equitable paths towards the flourishing of their members; that learning communities commit more boldly to the kind of learning that endures, transforms, and humanizes; and that the voices of those in the margins ever more loudly be heard as the voices of people who have so much to teach.

APPENDIX A

Permission Letter to Conduct Research at the XXXXX

March 10, 2022

Dear (School Director's Name),

Greetings of peace from the Loyola Marymount University (LMU).

As you may know, I am currently enrolled in the Doctoral Program for Educational Leadership for Social Justice here at LMU. I am now finishing my second year of studies and am preparing for my dissertation project which I am hoping to do on the topic of *deeper learning* there in Cambodia.

I understand that some of the innovative approaches you have taken in your school have been effective in engaging students and improving student learning and so I am writing to ask your permission for me to do a case study there on the tentative topic, "Amplifying Marginal Voices of the Global Movement for Deeper Learning: How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today."

May I kindly have your permission for me to undertake this research project in your school? If ever, this will entail interviews and or/focus group discussions with members of your school community (administrators, teachers, students and possibly parents), as well as classroom observations, document reviews of our administrative records and sitting-in during faculty meetings. Should you grant permission for this project, I am looking at coming to Cambodia August of this year to undertake this research and will try my best to schedule interviews and focus groups at times most convenient to all participants. I will also be complying with all the requirements of the Institutional Review Board (IRB) of LMU to ensure the protection of the rights and well-being of all intended research participants.

In the event that you grant permission for this project, I will request a letter from your office to the IRB, signifying that you have agreed for me to undertake this research project there. I send this with prayers for you and your entire team, hoping that you are all well.

Thank you very much,

Mark Lopez, SJ

Fr. Mark L. Lopez, S.J.

Doctoral Student

Educational Leadership for Social Justice Program

Loyola Marymount University

Los Angeles, CA, 90045, U.S.A.

APPENDIX B

Response from the School Director

April 22, 2022

Members of the Institutional Review Board (IRB)
Loyola Marymount University (LMU)
1 LMU Drive, Los Angeles, California 90045 USA

Re: Letter of permission allowing Fr. Mark Lopez,SJ to conduct case study research

Dear Esteemed Members of the LMU IRB,

We at the XXXXXXXX have been contacted by Fr. Mark L. Lopez, SJ, a member of the Catholic Church Mission Cambodia, who is currently doing his Doctoral Studies in Education there at LMU. He has requested that he undertake case study research for his dissertation here at XXXXX, in particular, about “Amplifying Marginal Voices of the Global Movement for Deeper Learning: How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today.”

This is to signify that we have consented and given Fr. Mark permission for this research to be conducted in our school. We understand that this will possibly involve Fr. Mark doing interviews and or/focus group discussions with members of the XXX community (administrators, teachers, students and possibly parents), classroom observations, document reviews of our administrative records and sitting-in during faculty meetings.

We also understand that your institution ensures the protection of the rights and well-being of all intended research participants, and we commit to helping Fr. Mark comply with all LMU IRB protocols during his time of research here.

Thank you very much.

Sincerely,
XXXXXXXXXX
Director of XXXXXXXX, Cambodia

APPENDIX C

Informed Consent Form for Administrators and Teachers

Loyola Marymount University Informed Consent Form *(for ADMIN & FACULTY)*

TITLE: Amplifying Marginal Voices of the Global Movement for Deeper Learning: A Case Study on How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today

INVESTIGATOR: Mark Peter L. Lopez, S.J., Educational Leadership for Social Justice Program, School of Education, Loyola Marymount University, +855(17)902517.

ADVISOR: Dr. Rebecca Stephenson, Ph.D., Educational Leadership for Social Justice Program, School of Education +1(310) 733-7693

PURPOSE: You are being asked to participate in a research project that seeks to investigate deep learning, how it is promoted, why it is important for students, teachers and administrators in XXXXXXXXXXXX Cambodia.

For this project, you will be asked to complete 1-2 semi-structured interviews that will each take 45-90 minutes, outside of class hours, at a time convenient for you. With your permission, these interviews will be audio-recorded.

You will also be observed by the researcher in 1-3 of the classes that you teach, and in 2-5 faculty meetings and general assemblies of the school.

RISKS: No sensitive information will be collected for this study and there are no grave risks associated with it. The minor risks or discomforts you may encounter during the interviews are that you may feel anxiety or nervousness. To avoid or minimize this, the researcher will assure all participants that the study will not seek to evaluate teaching abilities and performance but will only document best practices that participants are already applying.

The school-site, classroom and faculty meeting observations by the researcher may also give you the feeling of a minor invasion of your privacy. The researcher will therefore position himself unobtrusively and inconspicuously when doing classroom, meeting or assembly observations.

BENEFITS: This proposed study will help education communities in Cambodia by shedding light on critical pathways towards deeper learning. Insight about learning will help to improve the quality of education that schools can provide students today and for generations to come.

The XXXXXXXXXXXX community of teachers, administrators, parents and students may also benefit from the communal process of reflection and re-focusing on the educational objectives that this study will afford them through the interviews, focused group discussions, and outcomes

of this study. Participating in the study may help strengthen the community's own commitment to foster deeper learning in the school.

INCENTIVES: You and all other participants will receive no gifts/incentives for this study. Participation in the project will require no monetary cost to you.

CONFIDENTIALITY: Although the researcher will be collecting personal demographic data (e.g., your age, gender, number of years of teaching experience, educational background, etc.), your name will never be used in any public dissemination of these data (publications, presentations, etc.). All research materials in electronic format will be stored in password protected files saved in a Personal Identification Number protected personal laptop or personal mobile phone accessible only by the researcher. Consent forms and other printed material containing research data will be kept in a locked cabinet which only the researcher can access. Prior to allowing the transcriber/ translator access to the data, the researcher will erase any identifying information. When the research study ends, all the data files will be deleted or destroyed. All of the information you provide will be kept confidential and the researcher will use pseudonyms for all research participants when sharing the results of the research to help protect your privacy.

RIGHT TO WITHDRAW: Your participation in this study is *voluntary*. You may withdraw your consent to participate at any time without penalty. Your withdrawal will not influence any other services to which you may be otherwise entitled, your standing or relationship with XXXXXXXXXXXX.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon requesting the principal investigator via email (Mark.Lopez@lmu.edu) or via mobile phone (+1(424)3808236). A summary of the results will be available in 3-4 months' time, after the end of the data gathering period (scheduled for August to October 2022).

VOLUNTARY CONSENT: I have read the above statements and understand what is being asked of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason, without penalty. If the study design or use of the information is changed, I will be informed, and my consent reobtained. On these terms, I certify that I am willing to participate in this research project.

I understand that if I have any further questions, comments or concerns about the study or the informed consent process, I may contact Dr. David Moffet, Chair, Institutional Review Board, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045-2659 or by email at David.Moffet@lmu.edu.

Participant's Signature

Date :

APPENDIX D

Informed Consent Form for Parents

Loyola Marymount University Informed Consent Form (*for PARENTS*)

TITLE: Amplifying Marginal Voices of the Global Movement for Deeper Learning: A Case Study on How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today

INVESTIGATOR: Mark Peter L. Lopez, S.J., Educational Leadership for Social Justice Program, School of Education, Loyola Marymount University, +855(17)902517.

ADVISOR: Dr. Rebecca Stephenson, Ph.D., Educational Leadership for Social Justice Program, School of Education +1(310) 733-7693

PURPOSE: Your child is being asked to participate in a research project that seeks to investigate deep learning, how it is promoted and why it is important for students, teachers and administrators in XXXXXXXXXXXX Cambodia.

For this project, your child's class will be observed by the researcher for 1-3 times in this semester. If you, your child, your child's classmates and their parents agree, the researcher will make an audio recording of the classes he will observe. (If not all class members and parents agree, then the researcher will only take notes during class observation).

Your child may also be asked to join a small group discussion (a "focus group discussion") with 4-6 other high school students. The discussion will be guided by the researcher and supervised by a staff member of XXX. The discussion will be conducted in a classroom in XXX and will run from around 60-90 minutes, outside of class hours, at a time convenient for your child. During the discussion, your child will be free to share opinions about his or her experience of learning at XXX. The group discussion will be audio-recorded.

RISKS: No sensitive or embarrassing information will be collected for this study and there are no serious risks or dangers associated with it. The minor risks or discomforts your child may encounter when the researcher observes your child's class is a minor invasion of privacy. The researcher will therefore position himself unobtrusively and inconspicuously when doing classroom or assembly observations.

During the focus group discussions, your child may also feel anxiety or nervousness when sharing opinions. The researcher will assure all participants that there are no wrong answers for the discussion, and they will be free to share (or not share).

After the discussion, there is the risk of participants of the discussion sharing what your child said with other people, but the researcher will emphasize to all participants the importance of

respecting others' privacy and will ask them to pledge to keep what transpired in the discussions as confidential.

BENEFITS: This proposed study will help education communities in Cambodia by shedding light on critical pathways towards deeper learning. Insight about learning will help to improve the quality of education that schools can provide students today and for generations to come.

The XXXXXXXXXXXX community of teachers, administrators, parents and students may also benefit from the communal process of reflection and re-focusing on the educational objectives that this study will afford them through the interviews, focused group discussions, and outcomes of this study. Participating in the study may strengthen the community's own resolve, commitment, and capacity to foster deeper learning in the school.

INCENTIVES: You, your child, and all other participants will receive no gifts/incentives for this study. Participation in the project will require no monetary cost to you.

CONFIDENTIALITY: Although the researcher will be collecting personal demographic data (e.g., your child's age, gender, educational level, etc.), your child's name will never be used in any public dissemination of these data (publications, presentations, etc.). All research materials in electronic format will be stored in password protected files saved in a Personal Identification Number protected personal laptop or personal mobile phone accessible only by the researcher. Consent forms and other printed material containing research data will be kept in a locked cabinet which only the researcher can access. Prior to allowing the transcriber/ translator access to the data, the researcher will erase any identifying information. When the research study ends, all the data files will be deleted or destroyed. Confidentiality cannot be guaranteed in a focus group setting; however, we ask all participants to respect other participant's privacy and keep all information shared confidential.

RIGHT TO WITHDRAW: Your participation in this study is *voluntary*. You may withdraw your consent to participate at any time without penalty. Your withdrawal will not influence any other services to which you may be otherwise entitled, your class standing or relationship with Loyola Marymount University.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon requesting the principal investigator via email (Mark.Lopez@lmu.edu) or via mobile phone mobile phone [+855(17)902517]. A summary of the results will be available in 3-4 months time, after the end of the data gathering period (scheduled for August to October 2022).

VOLUNTARY CONSENT: I have read the above statements and understand what is being asked of me and my child. I also understand that our participation is voluntary and that I am free to withdraw my consent at any time, for any reason, without penalty. If the study design or use of the information is changed I will be informed and my consent reobtained. On these terms, I certify that I am willing to participate in this research project.

_____ My child may be included in classroom observations.

_____ My child may participate in a focus group discussion.

I understand that if I have any further questions, comments, or concerns about the study or the informed consent process, I may contact Dr. David Moffet, Chair, Institutional Review Board, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045-2659 or by email at David.Moffet@lmu.edu.

Participant Parent or Guardian's Signature

Date

APPENDIX E

Informed Consent Form for Adult Students

Loyola Marymount University Informed Consent Form (*for ADULT STUDENTS*)

TITLE: Amplifying Marginal Voices of the Global Movement for Deeper Learning: A Case Study on How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today

INVESTIGATOR: Mark Peter L. Lopez, S.J., Educational Leadership for Social Justice Program, School of Education, Loyola Marymount University, +1(424)380-8236

ADVISOR: Dr. Rebecca Stephenson, Ph.D., Educational Leadership for Social Justice Program, School of Education +1(310) 733-7693

PURPOSE: You are being asked to participate in a research project that seeks to investigate deep learning, how it is promoted and why it is important for students, teachers and administrators in XXXXXXXXXXXX Cambodia.

For this project, your class will be observed by the researcher for 1-3 times in this semester. If you and all your classmates and their parents agree, the researcher will make an audio recording of the classes he will observe. (If not all class members and parents agree, then the researcher will only take notes during class observation).

You may also be asked to join a small group discussion (a “focus group discussion”) with 4-6 other high school students. The discussion will be guided by the researcher and supervised by a staff member of XXX. The discussion will be conducted in a classroom in XXX and will run from around 60-90 minutes, outside of class hours, at a time convenient for you. During the discussion you will be free to share your own opinions about your experience of learning here at XXX. The discussion is NOT a test and will not be “graded”. The discussion will be audio-recorded.

RISKS: No sensitive or embarrassing information will be collected for this study and there are no serious risks or dangers associated with it. The minor risks or discomforts you may encounter when the researcher observes your class, or the student general assemblies is a slight invasion of your privacy. The researcher will therefore position himself unobtrusively and inconspicuously when doing classroom or assembly observations.

During the focus group discussions, you may also feel anxiety or nervousness when sharing your opinions. The researcher will assure all participants that there are no wrong answers for the discussion and you will be free to share (or not share) your opinions.

After the discussion, participants of the discussion may share what you said with other people, but the researcher will emphasize to all participants the importance of respecting others' privacy and will ask them to pledge to keep what transpired in the discussions as confidential.

BENEFITS: This proposed study will help education communities in Cambodia by shedding light on critical pathways towards deeper learning. Insight about learning will help to improve the quality of education that schools can provide students today and for generations to come.

The XXXXXXXXXXXX community of teachers, administrators, parents and students may also benefit from the communal process of reflection and re-focusing on the educational objectives that this study will afford them through the interviews, focused group discussions, and outcomes of this study. Participating in the study may strengthen the community's own resolve, commitment, and capacity to foster deeper learning in the school.

INCENTIVES: You and all other participants will receive no gifts/incentives for this study. Participation in the project will require no monetary cost to you.

CONFIDENTIALITY: Although the researcher will be collecting personal demographic data (e.g., your age, gender, educational level, etc.), your name will never be used in any public dissemination of these data (publications, presentations, etc.). All research materials in electronic format will be stored in password protected files saved in a Personal Identification Number protected personal laptop or personal mobile phone accessible only by the researcher. Consent forms and other printed material containing research data will be kept in a locked cabinet which only the researcher can access. Prior to allowing the transcriber/ translator access to the data, the researcher will erase any identifying information. When the research study ends, all the data files will be deleted or destroyed. Confidentiality cannot be guaranteed in a focus group setting; however, we ask all participants to respect other participant's privacy and keep all information shared confidential.

RIGHT TO WITHDRAW: Your participation in this study is *voluntary*. You may withdraw your consent to participate at any time without penalty. Your withdrawal will not influence any other services to which you may be otherwise entitled, your class standing or relationship with Loyola Marymount University.

SUMMARY OF RESULTS: A summary of the results of this research will be supplied to you, at no cost, upon requesting the principal investigator via email (Mark.Lopez@lmu.edu) or Viber/mobile phone [+1(424)3808236.] A summary of the results will be available in 3-4 months' time, after the end of the data gathering period (scheduled for August to October 2022).

VOLUNTARY CONSENT: I have read the above statements and understand what is being asked of me. I also understand that my participation is voluntary and that I am free to withdraw my consent at any time, for any reason, without penalty. If the study design or use of the information is changed, I will be informed and my consent reobtained. On these terms, I certify that I am willing to participate in this research project.

_____ I agree to participate in classroom observations.

_____ I agree to participate in a focus group discussion.

I understand that if I have any further questions, comments, or concerns about the study or the informed consent process, I may contact Dr. David Moffet, Chair, Institutional Review Board, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045-2659 or by email at David.Moffet@lmu.edu.

Participant's Signature

Date

APPENDIX F

Child Assent Form

Loyola Marymount University

My name is Mark Lopez, and I am a Catholic priest and a doctoral student at Loyola Marymount University. I am working on a research study called How Deep Learning is Fostered in XXXXXXXXXXXX because I want to know more about ways that your teachers and school leaders are helping you learn your school lessons well. Because you are a student in XXXXXXXXXXXX, I would like your help, if you want to participate.

If you participate in this study, I would like to observe some of your classes (around 1-3 times this semester). When I observe your classes, I will be taking notes in my laptop computer about what your teacher does during class and how you and your classmates participate in the lesson. If you and all your classmates agree, I will also make use an audio recorder to record the class.

If you participate in this study, I might also invite you to join a small group discussion with 4-6 other High School Students of XXX. This small group discussion will be facilitated by me and supervised by a staff member of XXX. During the discussion you will be free to share your own thoughts about the guide questions.

There are no dangers involved in participating in this study. You might feel a little weird when I come to observe your classes, but I will try my best to sit in a place where I will not bother or distract you from the lesson. You might also feel nervous or anxious during the group discussion, but there is no need to worry because the discussion is not a test (There are no right or wrong answers. Anything you share will be helpful for me.) I will also ask you and all the other participants to respect what others share and to not talk about this with anyone after the discussion.

I will not give you any money or prizes to participate in this study, but what I learn might help to improve the quality of education in your school and other schools in Cambodia.

I will be writing down your age, gender, educational level, etc. when I do this study. No one but me and the person who will transcribe and translate the data will see this information and we will keep your name and identity a secret. I will keep all the data I collect safely in a computer with a password or locked in a cabinet in my room. If I write a paper about this information, your name or any other information directly related to you will not be in it. I will not tell anyone else about anything you say or do in this study, except if I learn that you plan to hurt yourself or someone else, and therefore need help.

I am asking your parents or guardian's permission for you to participate in this study, but you get to decide whether or not you want to be involved. If you decide to participate, you can stop at

any time, and no one will be upset with you. You also won't get in trouble with your teachers or anyone at school if you decide to stop.

If you want to find out what I learn in this study, you or your parent can contact me via email (Mark.Lopez@lmu.edu) or mobile phone [+855(17)902517]. If you have any other questions, comments or concerns about the study or the informed consent process, you may contact Dr. David Moffet, Chair, Institutional Review Board, 1 LMU Drive, Loyola Marymount University, Los Angeles, CA 90045-2659 (310) 338-4400 or David.Moffet@lmu.edu

_____ I agree to participate in classroom observations.

_____ I agree to participate in a focus group discussion.

Participant's Signature

Date

APPENDIX F

Interview Protocol for Teachers

Amplifying Marginal Voices of the Global Movement for Deeper Learning: A Case Study on How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today (MLopez,SJ)

Greetings: *Joomriepsuah!* Thank you so much for agreeing to participate in this research project.

Introduction: The general topic of this research is student learning, in particular, how XXXXXXXXXXXX enables *depth* or *deep learning* in the learning experiences of Cambodian school children.

Your school's core values are actually very much related to deep learning, so for this interview, we will focus on them.

I'm providing a list of these 9 core values here so that you can easily refer to them during the interview. (Give list to teacher).

- Persons for others
- Respect for Khmer culture and traditions
- Academic competence/wisdom
- Collaboration with others
- Student-centered learning
- Reflective capacity/spirituality
- Critical thinking
- Compassion
- Ecology

So, this interview will have three parts that will help us to think and talk about 1) Why these values are important for you personally; 2) How these values are promoted in this school; 3) Opportunities and challenges that you see in promoting these values.

PART I: Why deep learning is important for them

What's the importance of these core values of the school?

Which of these values or competencies do you feel most strongly about? (Choose the top 3-4)
Why do you feel strongly for these?

PART II. How Deep Learning is Promoted

Can you give examples of ways (lessons, projects, topics, activities) through which you teach these values/competencies in a way that has a deep impact to the students?

Are there particular school policies that allow you to foster these values? If so, what might these be? Are there any policies that relate to school environment or classroom culture?

How about relationships? What kind of relationships or partnerships help you to promote these values? (e.g., with students, faculty, family members, community) Are there ways that learning in this school is impacting wider communities?

What about digital technologies? (laptops, tablets, celphones, powerpoint slide presentations, film projectors, etc...) Do you find them helpful in making any deep impact for the students?

*What about dispositions? Are there any that you have found to foster these values among the students? How do you promote these?

PART III. Challenges and Opportunities

What factors help you to promote these values in the school?

What factors make it difficult to do so?

At the end of the interview, thank the participant and ask if it will be ok for you to contact her or him for any follow-up clarificatory questions, and/or for a second interview to validate my understanding of the data collected today.

APPENDIX G

Interview Protocol for Administrators

Amplifying Marginal Voices of the Global Movement for Deeper Learning: A Case Study on How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today (MLopez,SJ)

Greetings: *Joomriepsuah!* Thank you so much for agreeing to participate in this research project.

Introduction: The general topic of this research is student learning, in particular, how XXXXXXXXXXXX enables *depth* or *deep learning* in the learning experiences of Cambodian school children.

Your school's core values are actually very much related to deep learning, so for this interview, we will focus on them.

I'm providing a list of these 9 core values here so that you can easily refer to them during the interview. (Give list to teacher).

- Persons for others.
- Respect for Khmer culture and traditions
- Academic competence/wisdom
- Collaboration with others
- Student-centered learning
- Reflective capacity/spirituality
- Critical thinking
- Compassion
- Ecology

So, this interview will have three parts that will help us to think and talk about 1) Why these values are important for you personally; 2) How these values are promoted in this school; 3) Opportunities and challenges that you see in promoting these values.

PART I: Why Deep Learning is Important for Them

What's the importance of these core values of the school? (Why do you think these values are important for Cambodia children to learn?)

Which of these values or competencies do you feel most strongly about? (Choose the top 3-4) Why do you feel strongly for these?

PART II. How Deep Learning is Promoted

Can you give examples of ways (lessons, projects, topics, activities) through which XXX teaches these values/competencies in a way that has a deep impact to the students?

Are there particular school policies that allow you to foster these values? If so, what might these be? Are there any policies that relate to school environment or classroom culture?

How about relationships? What kind of relationships or partnerships help you to promote these values? (e.g., with students, faculty, family members, community) Are there ways that learning in this school is impacting wider communities?

What about digital technologies? (laptops, tablets, celphones, powerpoint slide presentations, film projectors, etc...) Do you find them helpful in making any deep impact for the students? If so, how?

*What about dispositions? Are there any that you have found are helpful in fostering these values among the students? How do you promote these?

PART III. Challenges and Opportunities

What factors help you to promote the school's core values?

What factors make it difficult to do so?

At the end of the interview, thank the participant and ask if it will be ok for you to contact her or him for any follow-up clarificatory questions, and/or for a second interview to validate my understanding of the data collected today.

APPENDIX H

FGD Protocol Questions for STUDENTS

Amplifying Marginal Voices of the Global Movement for Deeper Learning: A Case Study on How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today (MLopez,SJ)

Greetings: *Joomriepsuah!* Thank you so much for agreeing to participate in this research project.

Intro: Father is doing research on student learning, and in particular, Father wants to know how your school helps you study well and learn deeply here. Since Father is asking you about your experiences, please know that there are no right or wrong answers. Father will accept all your answers and will be happy if you answer truthfully and if these answers are based on your own personal experiences here.

For this discussion, we will focus on your school's core values.

Father is providing a list of these nine core values here so that you can easily refer to them during the interview.

- Persons for others.
- Respect for Khmer culture and traditions
- Academic competence/wisdom
- Collaboration with others
- Student-centered learning
- Reflective capacity/spirituality
- Critical thinking
- Compassion
- Ecology

So, this interview will have three parts that will help us to think and talk about 1) Why these values are important for you personally; 2) How these values are promoted in this school; 3) Opportunities and challenges that you see in promoting these values.

PART I: Why Deep Learning Is Important for Them

Which of these values or competencies do you find the most interesting? (Choose the top 3-4)

Why do you feel strongly for these?

Which of these values do you think are the most important for Cambodian youth? (choose 3-4)

Why do you think these are important?

PART II. How Deep Learning is Promoted

Can you give examples of lessons, projects, or activities that help you learn these values/competencies?

What types of activities in your classes and in this school do you like? Why do you like them?

What do like about this school? (And what do you not like?)

(Probe: How about the environment in this school (the grounds, the classrooms, the behaviour of people and the way people treat one another)?

Can you describe your relationship with your teachers? (Do you feel close to them, or scared, or do you admire them?) How about your school administrators?

Other than your teachers and school leaders, can you think of other people who play a part in your learning experiences here? How do they help you learn?

What about digital technologies? (laptops, tablets, celphones, powerpoint slide presentations, film projectors, etc...) How do you use digital technologies in your studies? How are these helpful to you?

How about your own attitude or ways of studying? What do you do so that you learn more here?

PART III. Challenges and Opportunities

What makes it easy for you to study here in XXX?

What makes it difficult for you to study here in XXX?

At the end of the interview, thank the participant and ask if it will be ok for you to contact her or him for any follow-up clarificatory questions, and/or for a second interview to validate my understanding of the data collected today.

APPENDIX I

Observation Protocols

Amplifying Marginal Voices of the Global Movement for Deeper Learning: A Case Study on How Deep Learning is Fostered in a Rural K-12 School in Cambodia Today (MLopez,SJ)

In Classroom Settings

Prior to observing a class, agree upon ideal days for the intended observation with the participant-teacher. Upon finalizing the day for observation, inform the participant-teacher at least one day in advance.

On the day of observation, come to the classroom at least five minutes before class time. Upon entering the classroom greet the teacher and students who may already be there. Remind the teacher to introduce me and explain what I will be doing there at the start of the class. Choose an unobtrusive place to sit, at the back of the classroom.

Data to be noted from the teacher:

Lesson for the day

Teaching methods used

What the teacher is doing to engage the students, How He/she addresses or relates with them

How the teacher maintains or creates the mood/ feel/ in the classroom

Other signs of engaging deeper learning (competencies developed, dispositions formed, etc.)

Data to be noted from students whose parents have consented:

What they say when reciting in class

Reactions to the teacher or to other students (verbal or facial)

General dispositions (if they look bored, excited, restless, etc.)

Other signs of powerful learning experiences

At the end of the class, thank the teacher.

In Faculty Meetings

Prior to the meeting, agree with the administrator in charge of the meeting on days when I will be allowed to sit-in. Request that the administrator advise teachers and staff who will be in the meeting that I will be observing, prior to the meeting.

On the day of the meeting come five minutes before the meeting and remind the administrator in-charge to inform the group of my presence and purpose at the start of the meeting, and to thank them on my behalf.

During the meeting, sit in an unobtrusive place at the back of the room or outside the meeting circle.

From the Administrator-participants and Teacher participants, note:
the kind of environment and school culture their participation in the meeting fosters
items that they spend the most time on
quality and content of their conversations related to student learning and achievement.

Thank the administrator in charge after the meeting.

In General Assemblies

Choose a place at the back of the assembly hall from which to observe the activity.
From the Administrator-participants and Teacher participants, note:
the kind of environment and school culture their manner of running the assembly fosters
content and manner of the announcements made
general mood in the assembly hall

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